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„Comparing the innovation processes of two East Asian companies concerning economic success in nowadays world according to a Schumpeterian framework:
The cases of Huawei and Samsung Electronics.“

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1. Introduction

East Asia is a quickly emerging force in today's globalized world. The People's Republic of China (hereafter named China) and the Republic of Korea (hereafter named South Korea or Korea) represent countries that only entered the world of seminal industries and sectors starting from the 1960s or even later. Companies in these sectors have not been established for a longer time such as in Europe or the US; however these two countries still managed to race through a process of catching-up and are now under the leading experts in the personal electronics market as well as highly present in the fields of telecommunication equipment and services.

This is connected to their ability to create innovation on their own which is one of the main determinants for economic growth, albeit difficult to assess. Usage and invention of new technologies tends to push countries forward: valuable investments are made, the population receives advantages, productivity is supported and new economic opportunities arise. To gain all these improvements the respective governments of China and Korea passed policies which heavily supported innovation. These attempts were successful and nowadays China and Korea are part of the leading innovative countries and patent applicants in many fields. (World Intellectual Property Organization 2015, 8-13, 16, 27-28; Cai 2014, 86, 103-105; Kwon 2010, 4-5, 22-29, 58.)

The main task of this thesis will be the depiction of the following comparison: **Comparing the innovation processes of two East Asian companies concerning economic success in nowadays world according to a Schumpeterian framework: The cases of Huawei and Samsung Electronics.**

The focus of this master thesis will be laid on the factor of innovation in economics, namely on the different tactics and methods these two firms apply in the sectors of human resource management, supply chain management and in their respective research departments. An overview over the economic successes of the recent years will be given to better consider the efficiency of these described methods in a comparison of the actual economic numbers. The time frame will cover the past 7 years, so concretely beginning from about 2010 up until today, 2017. To offer a full picture of these research processes, the firms' problems and difficulties will be described as well. Also a look into the future developments of these companies will be included.

I want to analyze these points in front of a Schumpeterian analytical framework, which basically describes that some companies manage to lengthen their profits and not let them diminish, as the market, with the entry of more firms who also want to cut in, usually regulates itself, the "creative destruction" as Schumpeter called it. Schumpeter is of the opinion that only a constant flow of innovations and new creations can fabricate such "never-ending" profits. (Bullen et al. 2006, 60-61.)

To go into more detail two specific East Asian companies shall be examined, in this case **Huawei Technologies Co. Ltd.** (hereafter named Huawei) for China and **Samsung Electronics Co. Ltd.** (hereafter named Samsung Electronics or Samsung) for Korea on their way from their foundation to their position nowadays.

Huawei is a relatively young company distributing telecommunication equipment. It grew however particularly popular with its affordable but high-quality smartphones. The firm managed to get to the top of its industry by offering cheaper products than the competitors in the field. They also started a lot of development work in economically weak countries connected with the promise of creating and sustaining jobs, if the states agreed to trade with Huawei, which also gives the firm access to a cheap labor force. To establish their services in particularly poor countries with electricity troubles Huawei had to be creative which lead to the introduction of alternative energy sources. However, nowadays not only developing countries are Huawei's target but also Europe and the American market. (Godinho and Ferreira 2013, 1047.)

Samsung Electronics is a large electronics company that has been successful in its field for quite some years now and stands for affordable and high-quality products such as memory cards, TVs and smartphones. The firm wants to create an image of internationality and adaptability due to its subsidiaries in many countries. Samsung furthermore likes to emphasize the value it creates not only in output and revenue but additional social value which is supposed to aid global development goals and create a better future as well as better opportunities for more unfortunate citizens in developing regions. Having faced some troubles in the recent past such as corruption scandals in the upper echelon as well as exploding smartphones, Samsung Electronics is now on a path of correction to let the stakeholders forget these slip-ups. (Samsung 2017, 6-7, 18-19, 22.)

1.1. Motivation and research gap

The topic of developing countries catching-up has been researched quite properly over the years and many explanations and theories were found, particularly for the now economically successful Asian countries, from a Western as well as Asian point of view. The growing successes of developing Asian countries and particular companies have also been topic of extensive research. Moreover a comparison between countries from the electronics industry or telecommunication sector has happened frequently, particularly with economically successful firms. However, on the basis of a Schumpeterian framework these researches have not yet taken place. The Schumpeterian theories including derived analytical frameworks have been used and analyzed but not for East Asian countries or companies, however I am of the opinion that such an analysis is doable and feasible, as well as contemporary. In size and revenue some Asian firms appear to be on the same level as Western firms which make the objects of comparison in this thesis the same as objects Schumpeter used. Through the globalized world nowadays a grade of equality and quality has been reached that all companies at a certain level simply have to withhold to come as far as Samsung Electronics and Huawei made it, which makes these firms realistic objects of Schumpeter's theories. Describing companies at the top of their respective industry with huge potential for further future developments is a relevant research topic, particularly considering the factor of potential the home regions of these two companies have to offer and the industries of telecommunication and electronic gadgets in general. With the worldwide growing demand for constant connectedness and the necessity for fitting telecom devices, Samsung and Huawei both hit the nerve of the time and will most likely stay popular for years to come.

These parameters, chosen for my thesis, can offer deeper insight into the innovation tactics popular customer electronics and telecom companies use to stay on top of the market, which could inspire other firms to adapt certain methods to boost their innovative spirit and advance their production abilities and company revenue.

My thesis depicts how companies of developing countries manage to catch up to the level of firms in developed countries and moreover on how to stay successful and become independent once this basic goal is reached, following the example of two very successful enterprises which managed just that under relatively different conditions and through contrasting tactics. Managers of small and medium-sized companies can look at the methods and philosophies described which support the depicted firms in staying at the top of their game and gain more market share as well as expand their profits. However one must always keep in consideration that although all efforts are taken even fortunate companies can fail and as a small- or medium-sized firm without much capital one has to be especially innovative and creative to survive. (Gnyawali and Park 2011, 659.)

Weaknesses of this thesis are its sole support on secondary literature and reports published by the firms. In using data, collected from the companies and managers or upper echelon interviews, the thesis would work better in providing an actual insight into the innovation techniques used by these

two East Asian companies, however such an undertaking would be time consuming as well as it might be difficult to achieve, if the demanded insiders are not eager to share their knowledge and if the author is lacking any ties and connections to persons working in the upper echelon at the presented companies.

Another weakening factor is that no literature in original language could be used, which seems to be particularly limiting in the case study of Samsung Electronics, as there appears to be a lot of literature only available in Korean, which could have offered deeper input into the insights of the company and which was only unavailable due to the language barrier.

As only two companies were picked a major generalization attempt for the entire region is fruitless as the East Asian region is too diverse to be described by merely two examples. However a future and more intense research or fact finding in the form of large sample groups under the employees would shed more light in the dark and might at least be more representable for the countries chosen for analysis.

The comparison with a Western company or an enterprise from a developed country would also offer interesting opportunities for establishing contrasting views and methods as well as a bigger sample space for better interpretation of results. (Gnyawali and Park 2011, 659.)

1.2. Research question

My research question is: **Comparing the innovation processes of two East Asian companies concerning economic success in nowadays world according to a Schumpeterian framework: The cases of Huawei and Samsung Electronics.**

This question includes some subchapters such as: I want to give a quick over-view over the methods China and South Korea used to catch up to be able to birth companies such as Huawei and Samsung Electronics. The next step is to recognize the massive achievements the two companies Samsung Electronics and Huawei generated since their founding and think about how such successes were possible for the different situations of both countries.

To get into the methods of the companies I want to study their company philosophies, innovation tactics, core values and research departments to understand how they defend their market share in face of large competition in their fields that have in most cases a longer history and an easier beginning than their Asian counterparts.

Moreover I intend to look into the future development of these companies and additional problems they might experience in their fields as late-comer firms from developing countries. In the end I want to do a comparison and discover the differences these companies experienced on their way to the very top. I also want to compare the firms considering concrete economic data from the most recent company records dating to 2016. As a time frame I want to look into the situation of the firms primary after 2010 and use data as new as possible coming up to 2017.

All of my research and comparative indicators will be derived from a Schumpeterian analytical framework that I deducted from Schumpeter's works and main ideas and theories.

1.3. Innovation

Why innovation? Innovation is imperative for economic development and has always been. It is aspired and desired in developing countries as well as already developed ones. In general there is a difference between the terms innovation and invention whereby inventions can be made anywhere but innovations are more of an actively producing an invention and usually undertaken in companies once the time is right to actually manufacture the invention and be sure to make profits from it. (Maxwell 2009, 1; Fagerberg 2005, 1, 4-5.)

There are different kinds of innovation which are of course all helpful particularly for developing countries but some are more groundbreaking than the others and as such promise better profits and impact on entire industries when marketed correctly and profitably. Innovation does not only imply the creation of entirely new technological hardware but also can be made up from new means of production, a new way of serving customers or potential consumers as well as new forms of business such as a new enriching form of corporate management tactics or new means of loans for entrepreneurs or start-ups. However Maxwell also differentiates between three varying degrees of innovation according to the impact they have in the market and field. Incremental innovation signifies gradual improvement and development for already existing technologies or innovations. Usually the value of the product goes up whereas the price goes down due to progress in the production techniques to stay more competitive in comparison to other firms. The level of improvement in a certain time frame can also be linked to Moore's law. Firms dealing on this innovation level have to see to it that constant research is done to keep up with the competition and sometimes even lead the competition. Quantum innovation on the other hand describes larger leaps between developments and progresses as seen in the incremental innovation which means the innovations coming from it will certainly have an impact on the market and will make profits but will also be imitated by other companies in the field. Very desirable for firms is it to develop a disruptive innovation. These allow a firm to gradually change the entire market as the innovation they discovered or designed is so groundbreaking that it replaces everything up until this moment used in this field for example the internet. However this form of innovation is of course the most difficult and chancy. Companies have to carefully decide where to put most of their money in order to receive the most ideal output. Firms in newcomer countries do have their particular problems with these kinds of innovation as they usually mostly succeed in incremental innovation that is highly competitive and needs constant maintaining as well as does not generate the profits these companies need to invest more in research and development to climb up the level of innovations possible. Also certain fields have a harder time developing quantum innovation or even disruptive innovations such as the telecommunications industry as the options for further development are limited by the technique nowadays in this sector. (Maxwell 2009, 9-17; Tao and Chunbo 2015, 27, 31, 42, 48.)

In general the process of innovation starts with the basic idea that is transformed and realized in an induction and a development phase to finally be distributed on the market. In the best case scenario a tipping point will be reached soon that signifies that the result of the initial innovation does good on the market and generates profits for the firm. In some cases the market already has impact on the research phase of a future innovation if this information is demanded from the market. These processes allow it the company to design a product more like the customers imagine it or desire it which is speeding up the innovation procedures and guarantees more success on the market. (Maxwell 2009, 19-21.)

Of course before this process can come to pass an innovation has to be chosen. Many factors and sources are used to determine what innovations are worth being financed and developed. The upper management of a firm usually has the opportunity to skim through innovation portfolios in which innovations are presented which have to be assessed and reviewed concerning their possible execution costs, their risk and their possible outcome. Is one project approved the management still has the opportunity to monitor the development process it has to pass, again under the same criteria, even before the realization of the project has begun just to be able to assess potential risks or improvements in a more detailed way. If a company has enough resources even more differently assessed projects can be undertaken at the same time to cover all of the three innovation possibilities. Many scholars also come to the conclusion that for a company to succeed and live long and prosper talented and dedicated employees are one of the most important factors. These do not necessarily have to physically be in the company but promising work force can also be

outsourced and found online. The traditional form of management has to reform as well if it wants to lead their company into an efficient future that goes with the time and uses all the possibilities offered by today's technology. Innovation is not a one-man-show anymore but requires numerous experts working together and providing the best ideas to come up with the most profitable projects. In some sense the companies only have to put all the different, creative people together, point them in the right direction and let the magic happen. Other ways innovative projects come to pass is at the guidance of an entrepreneurial spirit who might launch a start-up or her or his own company. The entrepreneurs have to incorporate all the skills a whole team would make up in a larger firm or be very convincing and charismatic to motivate employees or business partners to produce ideas and keep the company going successfully. In other scenarios large firms try to establish such entrepreneurial minds in their company to push motivation and innovation or have firm company values that demand innovation from all of their employees. Another legitimate strategy is the one of open innovation. A company looks for potential ideas and talent outside of its own research and development facilities such as in universities who they can create innovative partnerships with or small start-ups that are in need of financial subsidies. However in this case capital can also be acquired through venture capital if the innovation is not incredibly risky. These corporate scenarios however omit the possibilities of innovations by chance which do not follow the standard procedure of the innovation chain described here. (Maxwell 2009, 21-28, 30-33, 35; Fagerberg 2005, 8-9, 11-13; Choi et al. 2016, 193.)

In theory the companies of all countries should be able to use these methods to generate innovations and bring chosen ones on the market so how can it be that innovations have different impacts depending on the countries executing them? The profitability of the innovation can differ according to what the innovation causes in a country under positive and negative aspects. As states and governments have varying policies and laws in this field such factors can affect potential innovation output. Another fundamental aspect is the predominant situation of the economy as to how open the market is, how many firms deal in it and the state of these companies as well as their possible output due to input factors. However these issues and more will be further described in chapter two. (Korres et al. 2003, 296.)

1.4. Countries chosen for analysis

I have chosen South Korea and China as these two East Asian countries experienced incredible economic growth in the past few decades. In general when thinking about the countries China and South Korea one has a connotation of developing countries in mind as these two countries are always referred to as developing in news coverage and in the literature. However thinking about and comparing economies in information listing all developing countries one starts to wonder how it is possible that China and South Korea with their current economic development can be found in the category developing countries in the data bank of the UN together with countries such as Myanmar or the Philippines. The GNI per capita shows that China is an upper middle income country and South Korea even an high-income country but still these countries are developing countries, but it is also stated that this category of countries has the highest economic growth. As China is a country of significant size it seems more understandable that the countryside is not comparable to developed countries which might justify the classification as developing country but traveling through South Korea one cannot help but feel that the state of development the country is in would allow a classification as a developed country. The more precise term newly industrialized country is maybe more fitting for both China and South Korea as both countries are already further developed than comparable countries. In China the factor of the non-democratic political system might be a large issue, as might be certain inequalities due to the diversity of the country. (Destek 2016, 38-39; Kong 2004, 20, 23; United Nations 2015, 137-142.)

The **People's Republic of China** only began to enter the global market in the 1980s after it started a process of opening-up to the world and the opportunities of globalization which were introduced by the government which wanted to increase trade and foreign investment in the country, measures which culminated in China's joining of the WTO in 2001. Through constant improvements, determination and focus on leading market sections such as high-tech goods China managed to become one of the world's leading export nations. Also its imports of cheap Asian intermediate products for assembling and creating its own products for primarily exports supported it in reaching this position. However China also sees its neighboring countries as well as the entire Asian region in general as potential output market for its products. Still one has to consider that in 2008 over 50 per cent of Chinese exports were carried through by foreign manufacturing facilities in China. China is such a desired production location as it allows heavy competition of prices, offers a highly educated but cheap labor force as well as the access to high-tech technologies. However the heavy focus on exports as well as excessive investments going up as high as 40 per cent of the GDP caused a faltering equilibrium in the country's economy and the economic crisis in the year 2008 did nothing to stabilize China's situation but reduced export demands and the GDP growth. To counteract the disastrous aftermath of the crisis China managed to stimulate its economy through investments as well as a generous availability of loans, however growing investments quickly become relative and cannot offer the same output they used to before. (Lemoine 2013, 11-17, 19, 21-24; Defraigne 2013, 32.)

In the case of China an assessment of the bigger picture accompanying economic growth in the country is much more difficult as China is remarkably bigger and more culturally diverse than South Korea. The Chinese living in rural areas and the ones living in the urban regions experience vastly different conditions. The population of China is aging and this trend is growing more and more in the next few years. In overall it appears that China has a great coverage of enrollment in the mandatory nine years of basic education, also in the countryside, however at times this is hard to confirm and to prove as reality and official reports tend to differ. A connected issue is the literacy rate claimed by the government but which surprisingly seems to be on decline in reality. The fault may be found in the rising costs for education in the 1990s and failing government expenditure on basic education. (Huang 2008, 242-248; Lemoine 2013, 24; Defraigne 2013, 32.)

Huang looks into the connection between growing GDP and equally growing individual wealth which is generally assumed. Apparently varying indicators show different results, such as the growth rates of GDP per capita and the growth of per capita household income. Moreover economic policies have a huge influence on the actual living conditions of the Chinese people. However with growing household income that is predicted with the rise of a middle class the domestic demand should grow as well as make China a target market for brands and companies from developed countries. (Huang 2008, 252-256; Lemoine 2013, 25-26.)

China is moreover one of the countries with the biggest distribution inequity according to the Gini coefficient, which made up 42.2 for the year 2012 according to the World Bank. This might not only have natural reasons but could be caused by corruption and favoring of certain persons, as well as the constant disparity between the urban and rural areas. Still many people of the rural population live below the national poverty line. Moreover is the constant growth of energy used wearing for the environment which includes higher costs to fight the after-effects, depending on the source between three to eight per cent of the Chinese GDP. (World Bank 2012, homepage; Huang 2008, 256-260, 293; Defraigne 2013, 32.)

Developed countries used to only outsource their production facilities to China and other parts of East Asia that offer a cheap work force and excellent outsourcing conditions but with the growing development and wealth of China multinational corporations also started to recognize China as an important output market heavily thought for. Moreover recently with growing labor skills and numerous university graduates China became also a popular country for establishing research and development facilities due to the better prices than in the companies' home countries. Moreover the

other culture could offer ideas and innovations new to the Western companies and enrich them through this manner. (Maxwell 2009, 21, 31; Defraigne 2013, 40.)

Concerning the massive growth China went through and is assumed to continue in the future Defraigne offers some points of reflection. One of his biggest concerns is the fact that although the Chinese firms invest more in research and development than some years ago, in comparison to competitors still not enough is spent on this field. However the economic growth rises anyhow through bigger manufacturing capacities but the quality of the sources of growth does not improve, particularly in state-owned companies which might also be protected by their respective local governments. This mechanism causes them to have a hard time to catch up with the globally leading multinational conglomerates as they are missing valuable assets as well. However through mergers of state-owned firms in certain sectors as well as protection of the Chinese market China aspires to create its own multinational firms or at least to dominate the domestic market. If a firm manages to achieve a certain success and accumulates financial means it might also attempt to buy foreign assets such as struggling companies in Europe to also improve its chances to penetrate this particular foreign market however it might fail to comprehend the mechanisms of the different culture and be forced to retreat from the opportunity. To spread its businesses into the world China relies on its relations with developing countries which are financially supported by China if they agree to offer natural resources or locations for the conglomerates. However countries such as the United States are not very keen on doing business with China and develop measures to prevent Chinese firms from entering the American market. On the other hand China is not able to seclude its own market heavily due to its participation in the WTO and other comparable organizations. (Defraigne 2013, 28, 30, 33, 36-42.)

In contrast to the giant China stands the **Republic of Korea**, a fairly small country whose political news and tensions to the neighboring North Korea tend to overshadow its economic successes. However it is a fact that South Korea's economy was one of the fastest growing between the 1960s and the 1990s but declined in comparison to the successes of the years before since the 2000s. The annual GDP growth was at 6.5 per cent in 2010 however declined heavily and is only at 2.8 per cent for 2015. The GDP per capita made up about 27.105 US-Dollars in 2015. Still now Korea is also one of the most developed countries participating in the OECD but the income per capita is still lower than the average. As in all developing countries the importance of the economic sectors shifted from the agricultural to the tertiary sector. The economic development Korea went through is certainly connected to the uprising of technology and information technology as these sectors developed particularly fast in Korea. However the slowing down of the progress now can be accounted to the heavy control of the government that took over the future planning of the economic development but is apparently still not perfect enough to be able to handle low growth. Due to the chaebol system and the avoidance of monitoring and the natural control of the market is Korea's business efficiency relatively low in comparison to similar countries. Another issue of the stagnating growth rate is the fact that Korea invests not enough capital and labor as well as too few investments in research and development. Considering the reforms of institutions and economic policies it has to be said that replacing regulations with new regulations does not always appear to be the answer to current or future problems, which can also be seen in international comparisons. The issue of over-regulation might also be connected to higher levels of corruption. Institutions with the task to improve and monitor negative business happenings are very likely in the hands of the government or the chaebols. (Kwon 2010, 1-5, 30, 36-39, 229-231; Ko 2013, 81-82; World Bank 2015, homepage.)

South Korea, same as China, is highly dependent on trade as up to 75 per cent of the GDP come from exports. Korea is on the place 11 for the most intense exporting level of an economy and in 2008 over 422 billion US-Dollars were made. The majority of the exports goes to China and also the exports to other Asian economies have grown, as did the exports to the US and Japan. Still over

20 per cent of Korean exports reach China. The tertiary sector in Korea is also growing through the export business. As this sector is highly important for Korea's economic successes the government sees to it that its policies and laws facilitate export business. Korea primarily exports goods connected to the heavy industry as well as electronic products which made up nearly 35 per cent in 2008. In the case of imports in 2008 the total sum came up to 435 billion US-Dollars with China, which is the most important trading partner as well as Japan and the US. The biggest trade deficit can be found with Japan as Korea cannot substitute the many high-tech products it has to import from Japan. As a small country Korea is lacking fuel which has to be imported as well, which makes up about 32 per cent of all imports. (Kwon 2010, 135-140.)

The direction the government chose as a motto for the future is primarily fairness as well as sustainability. Improved openness and liberalization is also attempted as well as far-sightedness to not miss any obstacles on the way and to not make decisions with only short-time revenues which damage long-term goals. The government should strengthen the private sector with its policies and decisions. The balance between globalization as well as preserving the own identity has to be attempted carefully. The best way to achieve this would be high levels of transparency, the integration of international standards into the legal framework of the country as well as open self-regulating markets. (Kwon 2010, 39-40.)

In the case of South Korea the economic growth it generated also added to more personal wealth of the population as well as advanced health care and better education. The equality in distribution of income in the country is relatively equal with a GINI coefficient of 0.306 for the year 2007. Still there are approximately 6 per cent of households living under the poverty line which concerns the oldest in society relatively heavily. Moreover the population also ages fast and is not growing as heavily as it used to decades earlier. Issues relatively ignored by the state are social development measures which should go hand in hand with a democratic political system, also to relieve the system of forcing family members to take care of their elders as there is no alternative. The expenditures of the state being spend on welfare have grown but not sufficiently to fight poverty reliably or create a proper security net. Moreover there are still deficits in the education system particularly concerning the production of leadership material as well as entrepreneurs or talents in seminal fields. The aspect of the realization of an entirely knowledge-based economy also still has to be brought into existence. The investments in research and development furthermore have to rise to properly keep up with the competition. (Huang 2008, 242; Kwon 2010, 4, 29-30, 41, 103, 336-337, 349-350.)

Other issues coming up in nowadays society other than economic and societal are connected to climate change as well as poisoning of the environment and the energy crisis with its volatile prices. (Kwon 2010, 3.)

1.5. Organization of the thesis

To provide a comprehensive thesis and answer to my research question as to which factors make a large East Asian company economically successful and to also find out which one of my two case study companies appears to be more profitable, I will follow a simple outline. I will explain my theoretical analytical framework in chapter 2. This chapter will introduce and define five indicators I will later use to conduct an analysis of the two case studies which will deal specifically with the two East Asian companies I have chosen to analyze. These case studies will be conducted in chapter 3 for the company Huawei and in chapter 4 for the company Samsung Electronics. These indicators will also provide the basis for the comparison I will administer in chapter 5 as to guarantee an unbiased and reasonable comparison. In chapter 6 a conclusion will follow in which the last loss ends as well as potential final questions will be discussed.

1.6. State of the Art

The cases of Huawei and Samsung including their development since the founding were described very detailed by a lot of researchers and secondary sources; however the firms themselves surely also have published information themselves. The state of the art concerning the topic of catching-up theories for developing countries is very vast, even particular companies are discussed in great detail, by Western as well as by Asian scholars.

Foster and Reinsch explain how a new technology that was improved and produced by Huawei and on which a big part of the telecommunications system of China is build up on can be extended and used by even more users than it already is. The technology Huawei established allows users to practice easy trans-device communication, which seems very practical. (Foster and Reinsch 2010, 297-298.)

Sun et al. claim that it is best for companies from developing economies to focus on research and development as well as marketing in their own market, in contrast to producing for other companies and not be in the position of the supplier of ready-to-sell products. (Sun et al. 2010, 305-308.)

Johnson and Chuang criticize the schooling system of China that does not support free and creative thinking and thus hinders Chinese innovation to a certain degree. (Johnson and Chuang 2010, 385-400.)

Maxwell offers an entire book about the different faces of innovation, particularly in a sustainable context. He offers examples from all around the world, including China. (Maxwell 2009, 1-74.)

Nie and Dowell provide a chapter from their book about Chinese firms and markets about the Huawei Company. However they mostly write about the company in relation to the US market as well as US foreign politics. (Nie and Dowell 2012, 61-76.)

Fan determines the techniques Chinese companies use to catch-up with more developed countries, also in comparison to the Asian market. (Fan 2011, 830-847.)

Godinho and Ferreira present how Huawei's and ZTE's numbers of registered patents imploded over the years. (Godinho and Ferreira 2013, 1044-1052.)

Gregory et al. compare the new markets of India and China. They analyze the facts around the success of Chinese hardware distribution around the globe and consider micro- and macroeconomic factors as well. (Gregory et al. 2009, 1-227.)

Huang takes up the topic of the capitalist China and finds factors and arguments for and against the statement that China can be considered a capitalist country, with the conclusion that there exists a capitalism with Chinese characteristics. (Huang 2008, 1-49, 233-298.)

Zhang used to work for Huawei in the company's customer advisory services and depicts his own view of the firm, however he appears to be no scholar as his writing is informative but quite informal. (Zhang 2013, 1-339.)

Tao and Chunbo take great lengths to explain with numerous anecdotes the core values of Huawei which are dedication to the company, great customer service, adaptability and compromises as well as many more. Their book was created in close cooperation with Huawei and Ren Zhengfei himself which makes the work a valuable source for how Huawei works. (Tao and Chunbo, 2015, 1-150, 243.)

Luo et al. come to the conclusion that joint ventures are an essential part of today's corporate development and should be enforced in the future, although Huawei already attempts to collaborate a lot with other firms. (Luo et al. 2011, 67-72.)

Defraigne discusses the economic growth China is able to develop in the future and whether or not the country manages to actually keep up with the high expectations everyone has concerning its economic development. Certain issues are standing in the way and a realistic outlook appears a little grim. (Defraigne 2013, 28-43.)

Ali et al. describe the process of Samsung's way to their own innovations and products, as well as techniques for developing countries to catch-up on developed economies. (Ali et al. 2010, 2874-

2888.)

Roco and Chen look into the future of nanotechnology and consider what Korea and China can add to this particular innovative technology, as the research of and in this field is rapidly rising. This information might be interesting for a case study of certain products companies research. (Roco and Chen 2009, x-7.)

Choi et al. discuss the changes of innovation in context of shorter product-life and fast changing customer desires as well as firm performance. (Choi, et al. 2016, 192-194.)

Hobday describes in detail and as a comparison with Taiwan the catching-up processes and techniques of electronic companies in Korea. (Hobday 1998, 48-78.)

Lee describes the catching-up methods of developing countries in context with a countries policies and institutions, as well as the aftermath of creating one's own creations and market them on a global scale. (Lee 2011, 98-128.)

Kenney tries to analyze the institutional influences on the Korean electronics industry, particularly the chaebol system. However he mostly refers to old information and focuses on the catching-up processes of the Korean electronics companies and their developments in the 1990s. (Kenney 1998, 2-15.)

Chang describes the changes in the human resources management in Samsung Electronics connected with the issues of seniority and the evanescent borders between the business relationships and the personal relationships potential future employees may hold with the owners' family also in connection with the chaebol system. (Chang 2012, 1443-1456.)

Lee and his colleagues discuss how Samsung entered the smartphone industry in particular and describe the way how Samsung included its suppliers further into the company and in the company processes of innovating and improving constantly. (Lee et al. 2015, 1-12.)

Moon and his team found out that clustering on a domestic as well as on an international level can bear numerous benefits from companies such as more innovation as well as cheaper work forces or production possibilities and outlooks for Samsungs future if it wants to become even more successful. (Moon et al. 2013, 79-82.)

The opportunities of co-opetition are described with an example of the competing firms Samsung and Sony by Gnyawali and Park. They offer an insight into the possibilities which open up to companies if they are able to cooperate with their competition, for example through joint ventures, in certain fields. Usually if these co-opetitions come into being the outlooks for a boost in market share as well as influencer power are sure for the companies which are involved in such projects. (Gnyawali and Park 2011, 651-659.)

Wong and Cheong go into great lengths to describe the catching-up processes four Asian countries go through to be able to compete on the global market against other companies that used to be far more successful than them however which are now seriously threatened by the Asian newcomers. They include the cases of Korea and China, as well as Taiwan and Malaysia. (Wong and Cheong 2014, 369-398.)

Glowik describes in great detail the path of Samsung to global greatness and economic successes by analyzing the company structure and the tactics Samsung uses to sell and launch its products. (Glowik 2016, 133-156.)

Kwon deals with the changes going on in the Korean state since the 1960s and explains the development since 2010 into great detail. He describes institutional changes as well as economic policies implemented by the state and their effects and faults. (Kwon 2010, 1-45.)

Hussain explains Korea and basic Korean economic happenings and curiosities to foreign scholars or readers. Unfortunately his book was published in 2006 and as such does not include the aftermath of the financial crisis in 2008. However Hussain already described the problems as well as opportunities coming up with the neighboring China making its way to become an economic world leader. (Hussain 2006, 21-250.)

Lee analyzes Samsungs way to power in the Korean economy as well as the company's success and economic development. Also the chairman's path and philosophies find mention in Lees work. (Lee 2006, 9-202.)

2. Theoretical Analytical Framework

2.1. Research design

Underlying to this thesis is a comparative approach as I intend to find the differences and similarities in the specific country and company cases of Huawei for China and Samsung for South Korea. I will offer certain criteria and indicators to be able to easier compare the two cases. Furthermore I will use the firms' economic performances from the year 2010 to the year 2016 to create a better comparison concerning the output and results of the comparative analysis.

I want to do a qualitative research with an inductive approach made up from already available data and secondary literature. I will only have a small sample of cases; however I feel these are very representative for our time and for popular East Asian firms which successfully sell their products in their home countries and the Asian region as well as all over the world. The aim is to find deeper knowledge and understanding about the methods and developments of the companies picked, which might lead to general assumptions one could conclude for the countries or even the Asian region, however this might be more difficult to achieve with such a small sample.

My research is based primarily on secondary data and literature of Western as well as Asian origin which means I want to keep my thesis explanatory and descriptive.

As I am using case studies in this comparative thesis as examples of electronics and telecommunication companies in two Asian countries I have to add that only picking out such a small number of cases for countries as big as China is of course by no means supposed to cover all probabilities and the situations of all similar and comparable companies in China and South Korea, let alone the whole of East Asia. Furthermore is it very hard to make generalizations on the account of the two case studies I plan to present, so I have to emphasize that I want to go into qualitative detail for the specific cases I picked and cannot offer a huge quantitative study.

2.2. Introduction

My analytical framework will be derived from the works and ideas of the famous economist Joseph Alois Schumpeter (1883-1950). Although old, the theories of Schumpeter still are very present and are often quoted. (Koch 2008, online article.) Numerous scholars continued the thoughts of Schumpeter and focused mostly on specific ideas and fields of his works. (Rosenberg 2000, 2.)

Most important about Schumpeter's economic theories are that they kept changing and evolving over the time, he himself emphasized the fact that economic processes should not be considered fixed. He was of the opinion that the past influences the present and future and only by considering historical happenings and decisions could the present capitalism be fully comprehended. Moreover during his life – and work time he saw economic changes happen which is visible in comparing his early works to the later ones. (Reisman 2004, 44-45; Rosenberg 2000, 2-3.)

However one must not forget that Schumpeter was a scientist, a thinker who was content with his role of trying to understand and describe economics and who never wanted to judge the development but only document it, a neutral explorer and vessel filled with knowledge others could siphon off. Of course he had an opinion, particularly on socialism, but tried to keep his works impartial. Moreover was he of the opinion that historical knowledge of economics of the past was essential to researches of the present and future and must not be disregarded under any circumstances. (Reisman 2004, 11-12, 15-16, 44-45.)

The analytical framework will specifically be build upon the Schumpeterian theories of the necessity to establish a flow of constant innovation as to “escape” the market equilibrium of diminishing profits as more firms enter new markets or new product markets. Combined with the

Schumpeterian theory that through “creative destruction” profits diminish as more companies enter the market and the fact that all companies want to increase their profits and output as cheaply as possible and Schumpeter is of the opinion that this ultimate firm goal can only be accomplished by innovation, the use of a Schumpeterian framework for the research of this topic highly connected to innovation in the corporate sphere and pointing at the successes and sometimes even survival abilities of firms seems quite useful. (McDaniel 2000, 279-283; Bullen et al. 2006, 60-61.)

Although the Schumpeterian theories were not planned for being used to analyze few, individual companies as Schumpeter considered such a little research field not extensive enough to gain proper inside knowledge into an entire country, I feel the Schumpeterian concept is still useful for doing so, particularly as I consider my case companies as exemplary for other similar firms in the countries of China and South Korea and maybe even more developing countries particularly in the East Asian region. (Bloch 2000, 344.)

Schumpeter’s primary objects of research were America which he emigrated to as well as his homeland Europe. However considering the evolution of today’s globalization that Schumpeter could not have dreamed of in his time I feel it is appropriate to use his theories for certain countries of East Asia as well, particularly China and South Korea and their proven successful companies Huawei and Samsung Electronics. (Reisman 2004, 4-11, 14-15.)

2.3. Schumpeter in Academic research

The Schumpeterian works were analyzed by numerous scholars, as well as developed further and transformed to fit into nowadays economic situation. I am of the opinion although most cases described refer to Western countries Schumpeterian frameworks can also be applied to Asian countries and although old the works still have value today, although some certain changes have to be considered that Schumpeter could not anticipate in that form, for example the necessity of a higher development and innovation speed of new products nowadays than was the case during Schumpeter’s times. (Choi et al. 2016, 198.)

The International Library of Austrian Economics published the primary works and important chapters of Schumpeter in a single volume however maybe a commentary of later economists would have improved this collective work. (The International Library of Austrian Economics 1999, 15-334.)

Bloch gives a great overview over the Schumpeterian theories in comparison with the works of fellow economist Steindl. (Bloch 2000, 343-353.)

Bullen et al. describe the positive and negative aspects of innovation in the context of choice-making and risk taking and the knowledge economy. They fear that innovation might be used to assess risks and responsibility will be handed away as no one wants to be responsible for risks anymore. (Bullen et al. 2006, 53-64.)

Ebner discusses the role of the enterprise and the term entrepreneur in the context of state and industrial policies. Ebner identifies state policies as help to forward technological development in South East Asian developmental countries such as Japan, Korea and Taiwan. (Ebner 2009, 371-387.)

McDaniel thinks about the role of the entrepreneur in creating new innovations and the development until one finally makes a profit out of an invention. (McDaniel 2000, 277-283.)

Zachariadis finds results that show the positive effects of higher research and development on innovation, economic successes and improved technologies as well as a higher number of patents and general output. This furthermore might trigger technological spillovers, which could be of help for other industries. (Zachariadis 2003, 1-16.)

Arena and Romani define the term social leadership as the best possible interpretation of Schumpeter’s entrepreneur. (Arena and Romani 2002, 167-181.)

Reisman gives an overview over the life of Schumpeter as well as his main theories, works and

contemporary economist and economic theories and critics from contemporary times. (Reisman 2004, 1-282.)

A company's competition, changes and economic success according to business cycles is explained in detail with numerous references to Schumpeter's original works by Raybaut and Sosthé. They explain Schumpeter's view of the competitive equilibrium and the influences on this economic balance as well as on the contrary cases between pure competition and monopoly. (Raybaut and Sosthé 2002, 184-199.)

2.4. Schumpeter's theories

To quote Rosenberg: *"Thus, Schumpeter's Weltanschauung is one in which science and technology, normally so far from the world of phenomena examined by the neo-classical economics of his own time, are in reality highly endogenous to the capitalist world. This is so because they have become subjects not only to the gravitational pull of economic forces, but also to the "habits of mind" inculcated by the rationalizing forces of the capitalist market place."* (Quote, Rosenberg 2000, 12.) This shows that Schumpeter was already ahead of his time concerning the importance of technology in everyday life and economy. Furthermore beforehand this passage Schumpeter managed to recognize the role capitalism already played in for his time unusual places, such as for example the organization in a hospital whose successes and developments he closely linked to capitalism. (Rosenberg 2000, 11-12.)

Schumpeter's main theory essential for this thesis is the one of creative destruction which lies in the disequilibrium of capitalism as it can never be stationary and constantly adapts to new situations as well as sheds out old ones. Schumpeter explains his theory as being derived from the fact that capitalism does not really support optimal production capacity, as monopolies tend to hinder rising competition. This is supported by the ruling of big corporations or conglomerates which produce more and more as well as the consumers who willingly buy a lot of new products coming along with a growing, affordable lifestyle. The gain monopolies have is furthermore profit for a longer or shorter period of time which is also the goal of all companies and which can only be reached by creating as sellable and as inimitable innovations as possible. (Schumpeter 1942, 134-135; Reisman 2004, 57-58, 69-70.)

He emphasizes the fact that capitalism has to be dealt with as a thing of constant change, a developing process as it is connected to economy and society, which both change as well. However, the biggest force behind it appear to be new goods, together with new markets and means of production, which are created by the quintessence of the capitalist system, spinning together in a perpetuum mobile, creating and destroying each other. As the structure of capitalism constantly changes by itself, destroying and creating again and again, the term creative destruction was born. (Schumpeter 1942, 136-138.) A further important aspect is the competition in the respective market that has to be imperfect to allow a company or entrepreneur to gain profits higher than the competitors due to the introduction of said innovations and new products or goods. (Arena and Romani 2002, 175.)

These processes force a researcher to always consider a longer period of time as a snap-shot cannot be properly analyzed. This is furthermore the case for the research of only one company or industry: it simply does not suffice to have such a small sample as one has to look at the bigger picture as well to find meaningful results. (Schumpeter 1942, 138.)

Schumpeter was already ahead of his time as he saw before other economists that not only the product price was essential to the consumers and consumer behavior but also varying product quality or factors such as customer consulting or advertisement. (Schumpeter 1942 A, 298.)

In his work “Business Cycles” Schumpeter states: “*We will, throughout, act on the assumption that consumers’ initiative in changing their tastes – i.e., in changing their set of our data which in general theory comprises in the concepts of “utility functions” or “indifference varieties” – is negligible and that all change in consumers’ tastes is incident to, and brought by, producers’ action.*” (Quote, Schumpeter 1939, 216.) Further on he justifies this thought with the argument that consumers cannot even think about demanding unprecedented innovations but that producers and marketing experts see to it that innovations become the consumers’ hearts desires. He acknowledges the role of a possible influential person or trend but sees it as mostly insignificant. Also today these influencers might also be directly or indirectly on the pay role of the companies and producers. (Schumpeter 1939, 216-217.)

Concerning the changes in production and distribution of a market one must consider adaptation processes; Schumpeter explains creative adaptation as the possibility to develop entirely new markets or products, whereas passive adaptation is just the possible expansion of a certain field, for example to create additional products to one main product that is already established. (Ebner 2009, 375; Schumpeter 1939, 215-217.)

To shortly present Schumpeter’s theory on business cycles: his varies a lot from the works of his colleagues on the same topic. He considered business cycles as the spawn of capitalism. He is of the opinion that instability is a feature of capitalism and cannot be avoided. For his business cycle theory Schumpeter starts from the concept of a circular flow economy without investment or savings in which the flow is stimulated by change. Savings in his theory are future investments and he takes credits into account, however the important factor for him concerning the business cycles are innovations. Schumpeter designed three models of business cycles with growing details which all are static but still grow steadily due to savings. Schumpeter as an advocate of economic growth through innovation does not accept other factors as economic growth stimulating, however interestingly enough he also considers innovation to be an internal factor as he feels that the production system is an important feature of the entire economy. The success and later unavoidable loss of profits from once profit-gaining innovative companies as well as their momentary wariness of loans or credits lead to the depression point in the cycle. After this phase a new innovation will get things back into motion and towards a boom again. (Festré 2002, 128- 138, 140-143.) However Schumpeter is not able to verify his cycle theory. (Reisman 2004, 245, 247.)

A threat to his concept or capitalism in general is of course the satisfaction of all consumer wishes and the accompanying failure to invest further with ongoing profits as there is no more outlet market left. Schumpeter at his times already mentioned this threat in his works in the year 1942; however he states that this state is still far away. Interestingly enough consumerism only rose more and more until nowadays and still there is no end in sight, on the contrary, with growing wealth in before poor areas more markets are developed and the appearance of new outlet markets never seems to cease. What is more, with growing wealth new desires tend to pop up for the individual, no matter the state of development of the country or society. (Schumpeter 1942, 213.)

Schumpeter declared himself as a huge admirer of the economist Walras and his works of the equilibrium and disequilibrium of the markets, a framework which he took and developed further. However he did not agree with every point Walras made. Interestingly enough did Schumpeter salute to Walras for his mathematical procedures however Schumpeter never used the resort of mathematics for his own works although he would probably have been able to and adored this scientific field very much. Nevertheless is Schumpeter criticized today for his negligence of calculating or at least considering certain economic features calculated mathematically. (Reisman 2004, 32-36, 38; Arena 2002, 40-45.)

Marshall wrote about the interdependencies in economics and also about historical development of

capitalism which is also a topic close to Schumpeter's heart. However not every thought of Marshall was adopted without adjustments. He criticizes Marshall's too personal writing style, too uneconomic writing and he accuses him of simply leaving out details that do not fit into his views. (Duval 2002, 66, 72-75.)

Keynes was a contemporary of Schumpeter but at the time more popular than him as he was able to hit the zeitgeist, however the two were in general very similar with comparable research topics although Schumpeter did not want to see this at the time. (Reisman 2004, 229-233.)

Schumpeter shows a clear fascination with Marx and his works, most likely due to the popularity of Marx's theories in Europe and parallels in their lives as scholars. He contemplates the theory of the change from capitalism to socialism which will be achieved without doubt and inevitably according to Marx when numerous conglomerates exist as well as a suppressed proletariat, but finally rejects it. (Schumpeter 1942, 19-80, 96-101; Reisman 2004, 17-18.)

Schumpeter used the models of capitalism and socialism as basis for additional studies of these two contrary systems. In his writings he also uses the two terms very frequently. He defines capitalism as the existence of private property, a market which has to be supplied and the possibility for credits. On the other hand Schumpeter was interested in the socialist system and theories and also fascinated by Marx's works. Moreover he felt that socialism might take over at some point and was in general a more desirable and more natural system than capitalism however he did not support this view his entire scholarly career and still had doubts about it. He defines socialism as the movement from the private sector to the public one where production plans dictate what is supposed to be produced and everything in economic matters is centrally controlled by a large bureaucracy. Despite Schumpeter's line of thoughts there are still points of critique and imprecise definitions. (Reisman 2004, 48-49, 122-125.)

2.5. Adjustments of Schumpeter's ideas in accordance to today's economy

Albeit old, Schumpeter's theories still hold value and truth and bear relevance to the economic situation nowadays, particularly because Schumpeter managed to predict certain issues and developments quite clearly, from which important and topic-related ones will be described in the indicators and chapters to come. However numerous factors have changed since Schumpeter's days and one furthermore has to consider facts and issues that Schumpeter did not consider as gravely important although they turned out to be.

Schumpeter was for example simply not able to predict the rapid changes product life-cycles would undergo over time. As the life-time of the average good nowadays became shorter and shorter over the past few years the technological advancements in these fields also have to be, or at least appear to the customers, significantly faster and more complex and complicated than anything Schumpeter could have imagined. These are new parameters which are more difficult to adjust and predict than in products with more stable longevity and not as much included customization which is popular and attracts consumers nowadays. The issue of shorter product life-cycles urges companies to invent new products faster and launch them as quickly as possible to gain advantages over competitive firms. (Choi et al. 2016, 192, 194, 198-199.)

A result of this new development to more customization is for example a more complex supply chain and product portfolio which increases production costs and requires a more agile supply chain or demands higher inventory costs as well as prolongs the process of launching new products. In each case the operating expenses increase and the output decreases and due to high competition it is unlikely that customers want to pay more for products available in the same form from numerous suppliers. Moreover a more specialized product as is the case with customized goods makes it more

difficult to improve the manufacturing processes and might be considered not worth-while due to cost issues. However for certain products mastering the issues of a complex production chain are still worth the revenues considering a longer time frame. (Choi et al. 2016, 194, 199.)

Schumpeter claimed that innovation and productivity growth are clearly codependent and interlinked. Rosenberg wants to dampen this enthusiastic approach with the argument that although technological innovation is shooting through the roof productivity growth is in overall increasing, however far not as fast as it used to be before the huge technological boom that can be pointed to approximately the 1970s. (Rosenberg 2000, 58-59.)

Rosenberg slightly criticizes Schumpeter for not taking the imitators, whose job it is to induce the process of creative destruction into closer consideration. Schumpeter sees the imitators of great inventions that an entrepreneur introduced with great effort and sweat to the market as mere followers of the entrepreneur who simply have to take the created product and hardly do much else than imitate it to cause creative destruction. However he never truly considered or acknowledged the impact these imitators have on the further distribution and potential popularity-boost and connected productivity growth of a new invention. He was of course aware that further innovation and improvement might be necessary for a product or that one invention could trigger another, even more successful one, however he did never specifically contemplate these further issues in his written works. (Rosenberg 2000, 61-63.)

Rosenberg introduces the term of technological complementarities, which states that two or more new technologies can be combined to either improve one of them significantly or together create an even more economically desirable object, although at first glance the combination seemed worthless and not ground-breaking at all, however managed to inspire numerous follow-up inventions which leads to them being called general purpose inventions. (Rosenberg 2000, 63-65.)

This is connected to the problem that in fact new technologies might not be crazily successful in the beginning of their existence and only later turn out to be hugely popular and useful. A proper assessment beforehand is difficult to take, as connected technological impact is hard to measure. (Rosenberg 2000, 59-61.)

Bullen et al. connect the term innovation with the knowledge economy and the risk economy. A new innovation is always connected with risks which are usually to a point uncertain and cannot be controlled or properly foreseen, however in today's society knowledge has a significant value which is fueled and represented by a constant stream of innovation. This equilibrium is a fragile one as innovation simply cannot be done without risks although risk assessment turned into a big business, which might give the impression that it can be controlled. In today's global world innovation and the circle of creative destruction moves faster than ever before, new knowledge is generated faster and in bigger scales than in the past and as the whole world has grown somehow smaller through tighter and easier connectedness risks appear to be even more difficult to assess and the threat of the term destructive creation turns up. The present and particularly future success of a whole nation is highly entangled with growing innovation and the biggest risk appears to be to follow up too late on the path of innovation and the knowledge society. Said knowledge society seems also to be more and more regulated by technology and innovation that basically develops itself and makes the people slaves to the apparently unstoppable technological progress. These innovations hint on accelerating dangerous fields in advanced technologies that might be dangerous but definitely could have negative impacts on institutions and society. This is where the term of destructive creation sets in: the fear of an uncontrollable non-exitable technology-ruled future as depicted in dystopian novels so popular recently. (Bullen et al. 2006, 54-60, 62-64.)

The neo-Schumpeterian school of post-Fordism is of the opinion that the Western societies nowadays are at the point of the fifth Kondratiev which means that the time of electro-mechanical

industry is replaced by a heavy focus on IT and connected industries. Nikolai Kondratiev created the idea of long-term innovation cycles and in each a certain technological innovation or field holds a main position and is at a point of increasingly new innovation replaced by a new cycle with a new main topic. However Schumpeter developed this theory further and established innovation cycles of declining length where again a main technological theme dominates until a new major one relives it. This is carried according to Schumpeter by the entrepreneurs who create innovations which others imitate. This causes prices to drop, sales prices as well as manufacturing and equipment prices which motivates other firms who have not yet entered this field to do so. As soon as everyone uses the new innovation other progresses will be made building up on these innovations which will eventually cause new cycles with new innovations. (Bullen et al. 2006, 61; Maxwell 2009, 1-2; Korres et al. 2003, 299.)

2.6. Innovation

Schumpeter defines innovation as more than invention, particularly as the set-up of a new production function. He defines five points: the introduction of new goods or a new method of production, the opening of a new market, the introduction of a new raw material and the development of a new organization. A careful definition of innovation is necessary to use the Schumpeterian framework most efficiently. (McDaniel 2000, 278; Schumpeter 1939, 228.) Also other authors have decided that innovation is much more than simply a new product, but a result of many factors such as science, technological inventiveness, companies, new information and much more. (Bullen et al. 2006, 60.)

Schumpeter himself considers innovation in Business circles as “..., any *“doing things differently” in the realm of economic life...*”. (Quote, Schumpeter 1939, 226.) In the term innovation he sees an internal economic factor which includes technological change, new markets and potential materials and manufacturing processes and additional business organizations, where no scientific background or breakthrough is required, however it is essential that the innovation causes change in the economic market. This does not mean that the innovation has to be incredibly special and novel but certainly has to change the business. This interaction between economic change and innovation is called economic evolution in Schumpeter’s literature as he is not keen on using the term progress. Moreover Schumpeter links innovation to the development of capitalism. (Schumpeter 1939, 225-227, 232.)

Schumpeter does not accept invention as synonym of innovation but defines invention as a limiting term which does not necessarily link with innovation and particularly does not imply economic advance. In case an innovation and an invention actually derive from the same core or creator they still should be treated as different things or processes with different values and implications. (Schumpeter 1939, 226; Reisman 2004, 65-66.)

Innovation is moreover defined as the replacing of the previous production function with a new one, now improved by innovation. In monetary terms innovation shows up in seemingly lower input costs to produce the same amount or more in output, which again replaces the old marginal cost curve by a lower one. Of course many factors can lead to temporary or long-term and constant falling average production costs however the main reason for actual reason in capitalistic systems tend to be newly added innovation. As lower production functions than the competition due to innovation lead to longer or shorter monopolies or monopoly-like conditions, innovation is so essential for companies. Schumpeter claims that most external economies of scale as first explained by Marshall, decreased marginal costs caused by factors outside the firm, are due to innovation, however the effect does not last monotonously but tends to decrease after some time. (Schumpeter 1939, 228-233.)

To explain the impact innovations have one has to dig a little deeper: innovations always bring along new machinery and other equipment and the installation costs time, expertise and money. On the other hand not every change in production techniques is connected to a new innovation. Schumpeter moreover claims that many new establishments of companies have as an underlying reason an innovation. This argument is another basic truth of capitalism: Older, non-evolving companies make place for new innovative ones, as well as new people in charge. Only huge conglomerates and concerns might withstand this more obvious change, however with a long-living company people also have to change from time to time but the constant innovative spirit might stay intact. Already in his days Schumpeter predicted that conglomerates would turn out to be global players resistant to the decay of time and attributed them a more difficult economic evaluation than smaller companies more dependent on the market. However he sees the same basic mechanisms in the future as in his time. Schumpeter considers the outcomes that many firms do not incorporate innovations all at once but either adjust over time or have no other choice but to succumb. This demonstrates for him that not all firms are equal and can be dealt with equally in an academic discourse. Furthermore he points out that some companies' upper echelon might be more willing to adapt according to their abilities and options whereas others choose not to, be it out of resistance of the public, the working progress that might get out of flow until it becomes accustomed again or shying away from unknown innovation that has not been approved before by others as a more basic human instinct. Reality shows nonetheless that in fact innovations, once put into motion tend to be adopted fast by firms of close proximity and are developed further at a speeding rate. (Schumpeter 1939, 233-240.)

In the case of the future rule of large conglomerates Schumpeter states that innovation turns into a process without any more luck or poetry and is simply taken over by working teams specifically trained for innovation. (Reisman 2004, 77.)

Schumpeter states that industrial policy and a whole economic policy setting introduced by the state is essential to a fast and efficient development of innovation in a developing country. Moreover is the establishment of research facilities and advanced training opportunities, taking the countries and societies core values into account necessary. This is connected to educational standards, literacy and the number of people who make demands on primary and higher education as well as the legal position on school attendance. (Ebner 2009, 381-382.)

Festré criticizes that Schumpeter did not have enough knowledge about technological aspects of innovation or interactions between various fields of science and the progress that comes out of research and development networks. Moreover is his separation of the terms innovation and invention considered misleading and conceals that he did not go deeper into the problem of where innovation actually emerges from. (Festré 2002, 137.)

Other issues Schumpeter appears to have not considered thoroughly are possible interrelations between different kinds of innovations a company can produce such as connections and influences product and process innovations have on each other. The goal for improved product innovation might trigger process innovation however once an automated manufacturing system is established further progress on a product might be more difficult and expensive to achieve. Companies try to prevent this mechanism from happening by including the option for potential innovative changes in the manufacturing processes in the future and work towards models which can be changed quickly and cheaply. Be that as it may it is most profitable for a company to invest in product as well as in process innovations and keep the interrelations in mind, but due to the shortened product-life cycles the investment in product innovations might be more profitable and is also expected, particularly from electronics sectors. (Choi et al. 2016, 194-195, 198, 200.)

Another conflict coming up in Schumpeter's theories is the fact that Schumpeter claims that innovation is needed and has to be used by a company for it to reach a state of monopoly. However

other scholars beg to differ that monopoly is certainly no cause of innovative behavior but might have to precede it, however no clear and true answer can be found to this debate as there are reasons for both sides of the argument which can even be combined to a circular process as innovation causes monopoly and monopoly also enforces innovation and so on. (Reisman 2004, 89-91.)

2.7. Indicators

I want to explain the indicators I will use to assess my case studies in greater detail in the following chapter, as to make it more comprehensible to the reader how I compare the two companies' performances in the field of innovations and to assure an objective and legitimate comparison. At the end of every subchapter possible criticism is voiced by scholars who do not agree fully with Schumpeter's theories.

2.7.1. Entrepreneurship/ Entrepreneurial aspect

Enterprises are the means to conduct innovations and the corresponding persons who help implement them are the entrepreneurs. Although the CEO or manager might be the entrepreneur as well and most likely is, one must not use the term entrepreneur too freely. However Schumpeter emphasizes that an entrepreneur can hardly be only that, the person surely due to being an entrepreneur automatically has to fulfill other functions as well. In case the entrepreneur actually does not hold any higher position in the company, the person is most likely to hold company shares. Being able to call oneself entrepreneur is primarily linked to one's leadership qualities, not so much to whether one invented an innovation or was able to finance one oneself, nevertheless does it mean that one is probable to rise higher in society but entrepreneurs can come from all walks of life. Once the entrepreneur has finished their innovation process and already marketed the product they will gain temporary limited profits as they manage to produce cheaper than all the other companies in the market but demand the same or even a higher price if the product is more advanced than the competitors. This makes innovation one of the primal factors of earning profits and rents as well as and following from these factors, wealth nowadays, as no other means is likely to catapult one into the state of abundance such as a huge innovation. However to keep on benefiting from ones innovation and ones profits entrepreneurs have to keep the streak alive through numerous matters such as marketing, IP rights and luck that no better or more sellable product enters the market. This calls for a constant struggle for survival for all companies in a capitalist market as every time a company wins another loses, even if they try to circumvent this fact by legislation or other means. (Schumpeter 1939, 240-246.)

To use Reismans words: *"The entrepreneur is a person who implements innovations in order to make his undertaking a success. Entrepreneurship is the propensity to pioneer new initiatives behind a veil of unknowledge so thick that it conceals the competition, the bad luck and the shipwreck. The propensity, separate from the person, can survive in the balanced teams of corporate organisation, but it can also be put at risk by the stifling repetitiveness of self-reproducing bureaucracy."* (Quote, Reisman 2004, 1.)

Entrepreneurs are considered to have a lot of power and take decision-making into their hands which help them create monopolies; all they need is a source of financing which usually comes from banks which only have to be convinced to invest in potentially risky projects. (Bloch 2000, 346-347.) It is essential for Schumpeter's definition that the entrepreneur does not risk his or her own money or assets but only his or her time and good reputation. Have they achieved this step so are they able to continue and to create and to spread their innovation to the entire market as far as possible. Moreover is it the goal of the entrepreneur to opt for more innovation and agreeable policies in the public as well as the private sector. As far as the interpretation of the term entrepreneur goes so is the person or institution emphasizing innovation and change not necessarily a sole individual but could also be anyone or any organization able to lead and motivate others

properly to create innovation, never mind the time, place or political system. However depending on the government and its policies entrepreneurial mindsets can be encouraged or hindered or state institutions could even slip in the role of entrepreneurs themselves, which has happened before in the past. The innovation process in a certain sector is stirred by innovative public companies which can function as role models for similar private firms and the government can offer additional assistance in the case of juridical or infrastructural improvements. However an involvement of the state is not always necessary or enriching but innovation might have developed anyhow on its own. Moreover can it be that in the case of too much government involvement only specific fields are promoted whereas others are disregarded. Schumpeter nevertheless states in his later work that a growing democratization and getting used to the procedure of corporate innovation shows that one leading entrepreneur is not really necessary but that this job can be adopted by a company itself, as soon as an entrepreneur managed to pull it up at least. This makes the role of the entrepreneur kind of obsolete or in the best case very volatile and makes the person assigned to this role relatively easy to replace. (Ebner 2009, 370-375; Reisman 2004, 66, 74-75, 78.)

Schumpeter sees the only threat to the existence and goal of entrepreneurs the state of perfection in which a society desires no more new products or innovations and is perfectly content with what they have. Economy would lose its significant value and, according to Schumpeter, a moderate socialism would take its place. However this state is still far away but what is actually happening is a growing notion of getting-used to more rapid innovation day after day. Innovative products are no exception anymore but a standard, which is moreover desired by (particularly young) consumers all over the planet. Coming back to the topic now under discussion: What does such a development mean for the role of the entrepreneur? A person with leadership qualities that manages to set new things into motion and encourages others to take these new roads as well is not needed in a world that does not resist innovation and the taking of new paths. Considering that not a single person has to be an entrepreneur but that this role can be taken by a company as well and basically has to be fueled by company-internal researchers or outsourced inventors one sees nowadays that these companies function as role models for entire industries and are running in open doors. No persuasion is necessary to make people buy the innovations or connected products but consumers are willing to spend considerable amounts of time and money to be the first to lay hand on the newest products these entrepreneurs (?) distribute. It seems that the term with Schumpeter's definition of entrepreneur might not be up to date anymore or might even be obsolete altogether. Big companies which lead the market as entrepreneurs used to might today be considered as influencers or are simply primarily fulfilling the function of the entrepreneur but in a very subtle, alleviated matter. (Schumpeter 1942, 213-218; Arena and Romani 2002, 172-174.)

A factor Schumpeter mentions is that innovation could be mechanized and simply executed by machines and computers, again making the classical entrepreneur redundant. However due to the, out of today's retrospect limited technological progress during his lifetime he did not have a chance to think about the dangers of technological progress and artificial intelligences and self-functioning machines and what their decisions mean for a more technologized future. (Bullen et al. 2006, 56, 64.)

Schumpeter moreover discusses the position of the entrepreneur in society and his connection to the bourgeoisie as a starting entrepreneur and the intermediate family is likely to enter the bourgeois class in case of success. Nowadays developments with the growing redundancy of a single entrepreneur and smaller companies and the rule of conglomerates and huge firms shows a development to a change for the middle classes as they will have to rely on salaries for leading positions as arranged in contracts like everyone else or fall either in the category of large or smaller stockholders. (Schumpeter 1942, 213-219; Arena and Romani 2002, 173.)

However considering all Schumpeter wrote about the entrepreneur and his role in economics

numerous later scholars offer criticism: One argument showing the flaws in Schumpeter's logic states that Schumpeter only took huge innovations into account which changed the world completely but did not consider other aspects of innovation at all such as small changes and advances in technological development that also helped proceed innovation. Another point of critique Schumpeterian theory is confronted with is the fact that he never properly explained how an innovation is exactly supposed to appear and that furthermore his definitions of various terms are overlapping or not precise enough to properly work with and find answers to still open questions. However Arena and Romani claim that in considering Schumpeter's entrepreneur as a social leader in a capitalist economic system the highly competitive aspect of Schumpeter's definition loses its severity. (Arena and Romani 2002, 180-181.) Other scholars claim that Schumpeter gives the entrepreneur too much credit and that in fact the market offers opportunities for the entrepreneur to grasp and spread, in other words that the market creates innovation and the entrepreneur is only a means to an end of spreading innovation. (Reisman 2004, 67-68.)

2.7.2. Competitors and competition

Concerning the theory of competition numerous scholars have already written about this topic. In the beginning the assumption of perfect competition was the standard one. Schumpeter refrains from the theory of perfect competition existing in reality and prefers the theory of equilibrium in economics which means that in general in a business cycle routine no massive deviations should occur if free competition is not restricted. These rules change however when entrepreneurial tendencies appear on the market which implies economic development. As newcomers with new product offers can choose their price range freely, monopoly rule applies to them at least in the beginning until other firms enter the same market, however they may also stay monopolies in very rare cases. In the case their monopoly status slowly dissolves as competitor firms produce the same or similar product, their profits disappear at some point, however if the monopoly rules for a long period of time the profits turn into revenue. Following these developments old companies might disappear as their revenues are now generated by younger competitors however this process still resembles an equilibrium. Moreover one has to add that the old companies do not necessarily go down without a fight, as they can still coexist with more successful firms at least some time and can try to adapt and tag along or again try to out-innovate the newcomers with financial back-ups or business connections. (Raybaut and Sosthé 2002, 184-190.)

In case of crisis and accompanying state subsidies the natural business cycle is slowed down, which is also the case when large companies or conglomerates appear on the market. However Schumpeter wanted to find out how an economy once unsettled falls back into an equilibrium-like state. He identifies happenings that cause disequilibrium as innovation however even with those occurring he claims that the market reaches a competitive equilibrium as the market and its participants will always aspire such a balance as they are used to it from the former cycles. Other factors that hinder a competitive equilibrium are stickiness and rigidity which are caused by numerous factors such as state intervention in price decisions. These components usually included in every economy tend to prolong the business cycles, however Schumpeter finds positive features in that as adaptation to the equilibrium does not happen too fast. (Raybaut and Sosthé 2002, 191-194.)

Schumpeter is inclined to consider pure competition and pure monopoly as special cases as all cases in between seem to appear more often in economic reality as a purely monopolistic economy is highly unlikely to occur. As to the other possible cases stuck between competition and monopoly there is the bilateral monopoly which appears very seldom. Another example is the oligopoly which leads to heavier indeterminacy however is also very unlikely to happen too often in reality. The monopolistic competition is considered the most interesting and important form by most scholars, so also Schumpeter. In this particular case products are developed in a more diverse direction to

make them more unique and distinguishable from the competition. This causes higher rigidity and has bigger impact on technological novelties in the production sector of the concerned field. (Raybaut and Sosthé 2002, 194-198.)

In Capitalism, Socialism and Democracy Schumpeter states, concerning the meaning of innovation:

“...it is not that kind of competition which counts but the competition from the new commodity, the new technology, the new source of supply, the new type of organization (the largest-scale unit of control for instance) – competition which commands a decisive cost or quality advantage and which strikes not at the margins of the profits and the outputs of the existing firms but at the foundations and their very lives. This kind of competition is as much more effective than the other as a bombardment is in comparison with forcing a door, and so much more important that it becomes a matter of comparative indifference whether competition in the ordinary sense functions more or less promptly; the powerful lever that in the long run expands output and brings down prices is in any case made of other stuff.” (Quote, Schumpeter 1942 A, 298.)

Schumpeter states which techniques a company needs to be successful in a capitalist world. Innovation is the key to economic success and profits and he implies that the attempt to monopolize by being highly innovative makes a firm the strongest competitor on the market; however one should not forget that the competition also never sleeps and could easily overtake one with just the next better marketable product. (Schumpeter 1942 A, 298-299.)

The innovating firms led or supported by entrepreneurs create the competition as these want to enter the market as well and orient themselves on the firms already in the market. Both are financed by the banking system. However later Schumpeter assumes that single monopolies which lead the market with new innovations are able to sustain themselves and create monopolies on purpose to hinder others from entering the market a well. This leads in general to an industrial concentration, however the process of creative destruction goes basically on forever as it is the balance of the market and there will be no point where investment ceases due to diminishing opportunities. The industrial concentration could also dissolve and become more loose again as capitalism is a constantly evolving and changing process. (Bloch 2000, 345-351.)

One must furthermore not forget that capitalism is build up on constant competition between firms. As mentioned before is the superior company which pockets profits according to Schumpeter mostly a newly founded one for a very specific task whereas old companies prove not to be as adaptable anymore and tend to fall even though they might have been highly successful in the past. However huge conglomerates might withstand this natural rise and fall of companies as their sheer size and their financial assets allow them to buy other innovative companies or host their own research facilities and have expensive and skilled scientists on their payroll. Moreover there are not as affected by wrong investments or non-successful or non-profitable innovations as are small and medium enterprises. When the factor of continuous innovation is covered the only thing left to do is to market it as successfully as possible. This is no more the work of luck or entrepreneurs but actually of experts and advisers, marketing specialists who are employed by a firm and carry out this task profitably as a team effort which automates the process of innovation. These factors basically give all the large corporations at least similar starting conditions and show that they all could be equally successful but are depending on the skills of their employees and other factors about corporate success that are very difficult to pin-point. However Schumpeter feared that this strictly planned way of innovating might lead to innovations slipping through the cracks as employees are not allowed to deviate too much from their assigned duty. (Reisman 2004, 72-74, 77, 79-80, 82.)

In general Schumpeter assumes that bigger companies are also more successful on the market as

they are able to produce for lower costs and have most likely more financial insurances at their disposal which allows them to keep bigger or more research facilities. However Schumpeter sometimes tends to infuse definitions of monopoly with the large firm or conglomerate. An explanation might be that prices from bigger companies are usually lower and pleasantly affordable for the consumer as bigger means of production also show a diminishing in average production cost per unit, moreover through innovative processes these costs can be lowered again. Also if these conglomerates take up the role of not innovator but imitator this emphasizes the need to offer goods to lower prices than prices that are already offered. However these arguments could be rejected considering that the huge company could also profit agreeably from the higher prices if it wanted to or dared to but the power of the state enters at this point and sees to it that sheer company size does not allow anyone to enrich themselves on an enormous scale. (Reisman 2004, 91-94.)

According to Schumpeter numerous factors prevent a perfect competition such as expensive advertising as well as the prohibition or at least retardation of new means of production, for example thorough patents. (Schumpeter 1942, 131-132.) However even if perfect competition was possible so would the competitive capitalism still have to be preferred. Schumpeter was of the opinion that not everyone had to be inventive and have entrepreneurial tendencies but that the rivalry for consumers between a small number of firms was more fruitful in the end as more agreeable products would derive from such a large-scale competition. (Reisman 2004, 80-81.) As a contrast McDaniel argues that the more competition the better, as this enriches society with numerous and various products as well as motivates everyone to innovate. In fields that tend to be led by monopolies competition should be established. (McDaniel 2000, 280-281.)

Nowadays fast adaptation to rapidly changing customer needs, although this speed of needing to change products into newer versions might have been induced by the companies themselves, is important for companies to stay competitive in the fiercely contested market. This is hardly possible for small and medium companies anymore but the conglomerates and huge companies on the rise can hardly be to blame for this development. However to somehow support the leftover smaller firms in risk of being trampled they should look into merging or being bought by a larger firm with more possibilities. (Bullen et al. 2006, 60; Reisman 2004, 82-83.) On the other hand is it the small companies that seem to have the biggest impact on desirable innovations as they are more likely to take a risk to experience a break-through, in contrast to the big companies with big research departments, which gives the small and medium-sized firms a lot of credit and bargaining power in case a bigger company wants to incorporate them after a successful idea or wants their advise and spiritual leadership. (Reisman 2004, 94-96.)

2.7.3. Company intern and external research

Schumpeter himself was not very interested in the process of innovating new things but simply left it for universities and companies to explore new innovations. He was keener on understanding the process of the entrepreneur spreading the innovation than the actual act of innovation. However Schumpeter knew in his later work that large companies and conglomerates were much more competent and financially able to keep large and productive company-intern research facilities and departments which give them huge advantages over small and medium-sized enterprises or single individuals. Moreover if smaller facilities manage to develop something important enough to distribute successfully and in huge amounts big companies are very likely to make them an offer and incorporate them, as most small start-ups nowadays indeed hope. (Reisman 2004, 65, 71.)

Despite Schumpeter's lack of interest in the research companies conduct to actually produce innovations I feel this is an important point one has to consider when dealing with specific companies and their innovative and economic successes to be able to offer a comparison between their research departments and to furthermore find out how this variable influences economic successes of a firm.

Research can be divided into two kinds: One is the basic kind, which is just used to find out more information about general developments, trends and potential future profitable projects as well as which of these things is worth investing in and researching further. No proper answer has yet to be found; it is more a process of creating general ideas. Another one is the applied kind which has the goal of developing or improving actual profit-bringing products. These are properly researched according to safety regulations and overall standards, tested in the laboratory and in practical situations to finally be produced and marketed for mass distribution. This should gain the firm profits, at least as long as a similar better or cheaper product comes on the market. To avoid or at least delay these diminishing profits the product cannot be left in this stage but never ceases to be improved and developed further. (McDaniel 2000, 279.)

Zachariadis finds that the research companies do themselves is much more valuable for them than research done by the whole industry they work in. Apparently even innovations done by other sectors could be more useful for an individual company's research. According to McDaniel the number of a minimum of 12 researchers in a laboratory is the most productive whereas a number over 25 people is already success-reducing. This information is true for any company, no matter the size as the subject of organization of the firm plays a much more essential role. What is vital is the goal of selling the researched product or innovation and that is what scientists might lose sight of: This can happen particularly easily if a company is very large and the research and development department is quite independent so that other sectors entrusted with large-scale production or marketing are not informed properly to act and prepare accordingly to the successes of the science department. Moreover lacking communication between the departments or problems in the firm's hierarchy or organization lead to unnecessary conflicts or problems, particularly if each department fights for its own funding from a central source that hands out money measured by success. This miss-communications and egoism leads to the waste of company money. Reisman even states that companies of medium size manage to create the highest amount of profitable innovations and huge conglomerates cannot exponentially to their size create better sellable innovations. (Zachariadis 2003, 6-8; McDaniel 2000, 281; Reisman 2004, 88-89.)

What can be stated is that research and development in a company surely increases the registration of patents. (Zachariadis 2003, 1.) It furthermore supports the company in creating new markets and products in the best case which increases the economic performance of the company. If no new innovative desired products can be created at least the knowledge from the research process can be used to improve production processes or existing products and as such can help cut company costs in reducing the manufacturing costs or attract consumers to a new model of a certain product, however there might be losses of profits if the reliance on research becomes too much as the implementation of new technological developments usually takes some time. However, if the company succeeds the revenue increases and the manufacturing costs decrease. Moreover usually a fixed part of the revenues goes back into financing more research and development and the whole process repeats itself. If bigger ambitions of the company are present and larger innovative strides are desired from time to time more fiscal means have to flow into the research facility. (Choi et al. 2016, 193-194, 197, 200, 202.)

2.7.4. Innovation tactics and productivity growth

Productivity growth is a factor that is quite hard to assess for numerous reasons: first, the most important measurement used tends to be declining production costs however what is often forgotten are the effects enhanced products themselves have on the market and on potential buyers, that might be more attracted after only a few slight changes. Considering official measurements on performances of products they seem to have a hard time following up with a real assessment of newly introduced products mainly due to the fact that some inventions are only considered after

having been on the market for quite a long time which had a huge impact on the much higher prices they were sold for in the beginning and the lower prices they were finally measured by later, as well as the decline in price not being documented properly. What is more, as the tertiary sector is in most developed and developing countries the most dominant one and new technologies are highly likely to be connected to it the assessment of the service sector does play a role in the accounting of the new products as well. Rosenberg states that the consumer surplus is responsible for the apparent low productivity growth in the services sector, as the competition is enormous and constantly lowering prices. (Rosenberg 2000, 72-75.)

Korres et al. discuss the process of diffusion of technology which implies the adaptation as well as the substitution of certain innovative processes and also includes imitation but diffusion researches more generally how technology spreads over time through these specific means and how much economic changes come with it. Also Schumpeter sees a certain tendency of innovation once born to produce more innovation in the same field. Later time gradually changes means of production and ways of management as well as society as a whole, usually for the better. However these changes are slowed down by the already established means of production or more precisely the ones holding onto them, be it institutions, the state or companies. So the mindset appears to play a role in the speed of the development manageable through innovation. Schumpeter did not draw this conclusion explicitly but nowadays it is a taken fact that home-made innovations are a clear factor for a country's technological as well as economic progress whereas on the contrary imitation and diffusion processes are seen as slowing down this progress. As a conclusion innovation is the elementary factor as an explanation to why some regions are more economically developed than others. (Korres et al. 2003, 293-295; Fagerberg 2005, 18-19.)

However other factors influence the impact innovations hold over economic performance as well such as the capital that is used to push growth, varying prices for raw materials or work force, changing state policies or laws, a more diverse economy which offers more products as well as heavily varying productivity outputs of different industries in an economy. (Korres et al. 2003, 294.)

Apparently the factor of product innovation is for a small company of bigger relevance, whereas in the case of a large company process innovation is more relevant. However if a large company is the first to introduce a new product it most likely manages to hold a monopoly position for at least some time and also profits from economies of scale due to its sheer size, but these advantages do not ensure high profits for the company. This is for example the case if the new product in question was not chosen carefully enough and is due to too advanced technology or high-tech level not desired by the mass of consumers who are used to a different level of technology and not yet ready to ascend to a new one. (Choi et al. 2016, 198, 200-201.)

Companies nowadays, particularly the ones I am going to describe and research in greater detail later on can all be defined with the later Schumpeterian thoughts about entrepreneurs. These companies are huge conglomerates where usually no real entrepreneur can be pointed out and even the founders and CEOs are not really known by the large public buying the company's products. This means that a single person invested time and money in building up the company but that this individual did not invent something groundbreaking but found a product that was likely to make profits when sold and managed to produce it quite cheaply. Soon more products were added to the assortment of goods which also sold well and only later on the companies were able to finance a large innovation and research and development department to create innovative products. (Reisman 2004, 71-79.)

Introducing a new innovation in a company such as a new means of production has to be properly analyzed. It has to be calculated whether the installation of new machines is worth the lower production costs and increases output and profits in general. (McDaniel 2000, 281-282.)

In case a company researches something of interest for the state, particularly potential military gear, subsidies are likely to be offered. (McDaniel 2000, 280.)

2.7.5. Companies as imitators/ Imitator tactics

Imitation is the act of trying to reproduce a product as good as possible from another firm. However Schumpeter argues that the imitator has it easier in marketing their copied product after manufacturing as they have the chance of already improving it to customers' needs and are able to combine it with other innovations due to diffusion. (Korres et al. 2003, 293; Fagerberg 2005, 15.)

Once an innovation is finished and being distributed on the market other companies in the same field will try to copy it and later on change it or develop it further. As long as all companies invest and produce this new desired product no losses are made at first. Only later when the new, cheaper produced product is fully accepted by the market the old firms will experience losses but only to the point until other companies learn to offer the product for similar prices and the profits start to diminish for everyone. However Schumpeter does not properly explain a detailed connection between the innovator and the sudden emergence of the imitators considering that most of the time more than one entrepreneur works on the same issue or very similar project and could release their novelty at the same time or shortly after. Also if the context or geographical location is different but the innovation more or less the same the question of who is the entrepreneur and who is the imitator is not easy to answer as both can hold every role depending on the point of view. (Festré 2002, 138-140, 143; Fagerberg 2005, 8.)

Although Schumpeter likes to use the term of mere imitators, for big important technological innovations this term never does justice to what actually has to be done to get technology from the beginning as it started out to the point it is today, for example electricity or computers. Not only can the improvement of the basic invention never cease, but also factors such as cheaper additional or spare parts and construction costs as well as an ever-expanding potential and actual markets and niches is of importance. These factors might also lead to delays or disappointment in certain areas or in connection with necessary features that cannot be invented fast enough to reach a certain goal or level or cannot be spotted competently enough for a longer period of time to see what already existing things could be combined together. (Rosenberg 2000, 69-71.)

2.8. East Asia and innovation

As cases discussed by Schumpeter usually point at already developed countries one has to consider the situation of developing countries or newly industrialized countries. They are in the situation that the developed countries were in maybe a hundred years ago, however now one cannot simply assume that the position of these East Asian countries is exactly the same. The fact that more developed countries exist already changes the starting point of the developing countries in Asia. They do not have to conduct trial and error but can learn from the experiences these other countries already undertook before them. Now the tables have turned and numerous successful cases of catching-up already took place which can also be taken as positive role models for other countries. However in the beginning all the East Asian economies had in common was a lack of capital and assets as well as know-how as on how to develop and escape their situation being stuck in cultures relying on agriculture and being involved in conflicts and having political issues. (Wong and Cheong 2014, 370, 372, 374.)

For his theories Schumpeter acted on the assumption that the states he researched had reached to at least some points a steady state, which means that only through more innovation, higher research and development inputs as well as more patenting economic growth could be guaranteed and stimulated. Nowadays in the developing countries of East Asia, namely China and South Korea, a

condition of steady state has not fully developed, but will certainly in the near future, as is the case with Western states at some certain level of development. However in the case of China and Korea, these two countries do everything to avoid slipping into a steady state by creating new innovations even before having reached the steady state status. (Zachariadis 2003, 1-3.)

Ebner states that the factor of governmental policies plays a huge role in the quick economic development of East Asia and that the East Asian states try to implement industrial policies that specifically promote economic growth which does not spare the private sector but encourages collaboration between public and private sectors. Specific research is necessary to evaluate whether these policies in the fields of innovation, institutions, know-how and entrepreneurship are in fact successful or not. As developing countries usually lack advancement in all these fields at once it is essential that the government takes over the role of the entrepreneur to set things into motion and functions as role model for the private sector as well as implements policies tailored to improve all lacking fields as good as possible. Moreover is it essential that some sort of returns through production is established to have a bigger financial boost available and create rudimentary markets to promote faster industrialization. Furthermore are the governments able to offer subsidies to chosen private or public companies. These developing countries need to use various catching-up tactics such as the acquirement of skills foreign developed countries already possess to achieve further development. (Ebner 2009, 375-378.)

The state yields quite some power over private firms with governmental subsidies, which they receive in case their work is executed according to certain requested requirements. With the combined capital they gain this way bigger and more profitable projects can be undertaken. This way private firms can be led to a more autonomous entrepreneurial aspect and the only thing standing in the way of the level of equal success as developed countries could turn out to be the inability to actually carry out innovative processes self-dependently, even with gentle help from the government as leading entrepreneur. Moreover is it necessary that an eye is kept open for future developments on a global scale to push potential innovation in a fitting direction, reduce damaging risk and ease export potential. With such clever guidance of the state and subsidies for the right fields South Korea's government managed to turn the country from a developing market into a developed one. This example shows that a catching-up process implemented, planned and controlled by the state can lead to outstanding results and runs on its own in the private sector after a period of support. However even after the critical time frame of catching-up the state can still stay involved in the future guidance of the market and the general direction the innovative processes are going to by seeing to it that potential opposed interests are served or mediated properly. (Ebner 2009, 378-380.)

East Asian countries in general are very keen on seeing innovation produced in their own countries thrive, supported and promoted by the public as well as the private sector. This may be connected to the fact that certain countries have not yet fully successfully finished the catching-up process to an equal technologically developed level as the Western countries and the fact that to surpass these countries in the global market more effort has to be put in the research and development sectors. Once this process of massive investment in innovation has started it must never cease again to keep competitive on the global market. This goes hand in hand with further developments concerning the still involved state for example with specific newly founded institutions to better support high-tech innovations as well as the willingness to grant credits to riskier projects or offer funding as long as the projects are near a path the government is willing to take in the future which is shown by the developments the industrial policies take over the course of time. (Ebner 2009, 380-381.)

The East Asian countries in general show similar ways of passing through the catching-up processes, which go hand in hand with increasing research and development networks also purely financed by private companies and a growing number of university graduates as well as constant development of governmental institutions conjoined with the growing level of innovation. The most important

factor is the collaboration between the entrepreneurial state and the developing private sector, a coherent joint action as well as a good outlook onto future trends and development concerning the innovation sector to keep one's country competitive and to minimize risk for developing into a completely unsustainable direction, particularly at the point of switching from the catching-up process to self-made innovation and the transformation to an entrepreneurial society always looking to be innovative and keen on expanding their knowledge. However this point is highly critical as failures from other economies are to be avoided and the entrepreneurial state organs are under high pressure of succeeding and making the right choice for future advancements and leading the private sector in a prosperous direction. This can only be achieved by open communication, transparency as well as an honest political administration. Ebner also suggests the advantages of deliberation councils which are supposed to negotiate between the state and the private sector and point out potential lack of know-how and expertise in innovative fields. What is more, developing states in East Asia tend to plan ahead for a longer period of time due to their entrepreneurial outlook and their wish to increase development, which makes them more likely to change influential policies to reach their goal of industrialization in contrast to Western regulatory states which emphasize hierarchy and are led primarily by the development of the market. However some East Asian countries have tendencies to shift their focus from a mere catching-up process to the, if successful, more profitable entry into the global innovation market connected with more efforts to satisfy the future demands of this market. (Ebner 2009, 382-385, 387.)

An important process of catching-up is shown by the flying geese model which basically depicts the system of countries which manage to develop further and have rising wages and production costs moving to less developed countries with a cheaper work force, a process which can be repeated extensively. However this idea holds conceptual weaknesses as the before less developed countries could catch up and even overtake the countries which outsourced production in the beginning. This would change the balance described by the model and renders it faulty. (Wong and Cheong 2014, 376-377.)

Prominent catching-up techniques of developing economies are for example the usage of foreign direct investment. This is particularly helpful in the beginning before countries can accumulate enough capital on their own. Moreover are these countries in need of know-how in numerous fields and aspects which foreign firms or multinational companies can offer, even though it is still questionable to what extent underdeveloped countries actually do profit from the knowledge being brought in by foreign investments. Furthermore does it assist countries which have no real foot on the global market to enter it, even if it is only on a small scale or specifically for trades with the investing countries. However a heavy dependence on the aiding country can also sabotage a developing country in stepping out of the shadow of the more successful helper. If the developing country is aware of this particular danger it can countersteer by trying to invest work force and capital in research and development to guarantee some innovations of its own making. (Coase and Wang 2013, 150-151; Wong and Cheong 2014, 384-385.)

Before a developing country is able to create its own innovations the diffusion of innovative technology or processes is a legitimate means to catch up, although apparently the economic performance of a developing country might not be necessarily improved. Furthermore there can be resistance towards new innovations from other countries depending on the conditions of one's own market. A smaller country usually has an easier time adapting new technologies from abroad particularly if it has an open relationship with research and development and promotes innovative values. Innovations which are spread inside a country and also originated from it tend to spread faster and multinational companies are most successful in spreading the know-how on how to manufacture certain products. However in general bigger companies have an easier time adopting new technologies although they spread slower in a large firm than in a small firm but particularly for companies in developing countries which might not have unlimited capital and resources the decision to adapt a new technology can be costly and the improvement the output finally gains has to be considered carefully as first money has to be invested in new machinery and knowledge.

Moreover if more companies adapt new technologies at the same time a more competitive climate is created which pushes economic development further faster. (Korres et al. 2003, 296-297, 299-300.) Innovation in Asia can spread in the way of countries undergoing certain production steps. They usually start out with original equipment manufacturing where they produce goods for a foreign company that are finally sold under the company's brand name. The next step is to manufacture their own products after a period of research and development and they can also try to create a brand for these self-developed goods. The leap-frogging technique implies that newly developing countries tread in the steps of the firms of developed countries to finally change some products or production techniques. Furthermore there is the possibility of only getting inspired by some factors of the developed firm and creating something on one's own entirely. (Wong and Cheong 2014, 377-378.)

Another option is to simply imitate technology and innovation from the lead countries. This requires already a certain amount of knowledge and ability to execute such an undertaking as well as calculation how much gain one can actually get out of the copied innovation and whether it pays off to not officially buy the patents or licenses a desired product requires. However sometimes the imitator still has to buy certain official products and the question is more whether the imitator can increase production to such a point that it is cheaper than the one of the innovator, considering that the imitator already knows that setting up the production is under the costs the innovator spent. (Korres et al. 2003, 297-298.)

On the other hand these arguments are also similar to the ones one has to consider if a company wants to innovate itself. The costs for research and development have to be available, ideas have to be analyzed and considered and a certain risk is always there with innovation. As mentioned before in this case it helps strongly if the government stands behind innovative policies and maybe offers subsidies and creates an agreeable climate for more risky ventures with potential high profits. (Korres et al. 2003, 297-298.) According to Schumpeter, the ones making the innovation and being first in the market might hold an advantage over the followers. However the following can soon become the new leaders when they are able to invent a new more desired product or unlock an entirely new market. It is also easily possible that the innovation made turns out to have its limits and if no planning and research was considered in other directions the company has to sacrifice its corporate life for one single innovation. To avoid such a problem a creative and far-looking management is of necessity. (Bloch 2000, 351; Fagerberg 2005, 10.)

2.9. Conclusion and summary of indicators

Schumpeter already realized during his time: The ideological entrepreneur who introduces great innovation to the world is dying and huge conglomerates with automated innovators and researchers and marketing teams take his place. Schumpeter and his contemporaries were very concerned about this development and feared the slow decline of real inventions and the connected positive features however as we can see nowadays nothing turned bad and uninventive, the process of creative destruction is still taking its course and entrepreneurs in the classical sense still manage to pop up, although their appearance might have changed since Schumpeter's time as he probably could not expect the rise of the Silicon Valley and its IT entrepreneurs and companies. However Schumpeter himself as a man going with time and adjusting his world view accordingly was no enemy of the natural evolution of economics. (Reisman 2004, 76-80.)

Although the situation of monopoly is sought by many firms, a monopoly is no guarantee for profits forever as competition is fierce and might just come up with something that steals profits away from a former monopoly. What is more to avoid this situation a monopoly should not become tempted to demand ridiculously high prices as this motivates consumers even more to switch brands as soon as a similar product enters the market. This process might keep prices low even though no competition is in immediate sight. However with innovations it might also be the case that it takes years until

products are finally available for everyone as only a rich elite can afford them in the beginning. This is also a similar situation for developing countries, where products take longer or have to be developed by the population itself to become affordable. (Reisman 2004, 83-84.)

To offer a conclusive overview over the indicators I established in this chapter, I want to refer to the following table which concludes the indicators and their main arguments again. Now the order follows the one used in the next three chapters.

Innovation tactics and productivity growth (Rosenberg 2000, 69-75; Korres et al. 2003, 293-295; Fagerberg 2005, 18-19; Choi et al. 2016, 198, 200-201; McDaniel 2000, 281-282.)	• Economic growth = declining production costs • Further product innovation might change the attraction of a product and boost sales • Prices of innovative products drop over time on the market but also boost sales • Services are more difficult to assess • High competition diminishes prices • High levels of development depend on high levels of innovation produced in the respective country • Company size and customer opinions matter • Companies have to plan innovations very well
Entrepreneurship/ Entrepreneurial aspect (Schumpeter 1939, 240-246; Bloch 2000, 346-347; Ebner 2009, 370-375; Reisman 2004, 66-68, 74-75, 78; Schumpeter 1942, 213-218; Arena and Romani 2002, 172-174.)	• Schumpeter's term entrepreneur refers to leadership qualities of a person • Having an innovation at hand is essential for entrepreneurs, as are marketing abilities • Financing entrepreneurial projects is conducted by banks • Institutions or governments can also be entrepreneurs • A procedure of corporate innovation can replace the entrepreneur • The open economic situation nowadays might make the entrepreneur obsolete • Demand is essential for the entrepreneur • Critics claim the market offers opportunities itself and entrepreneurs are not as important in realizing them as Schumpeter believed
Competitors and Competition (Raybaut and Sosthé 2002, 184-194; Schumpeter 1942 A, 298-299; Bloch 2000, 345-351; Reisman 2004, 72-74, 77, 79-83, 91-96; McDaniel 2000, 280-281; Bullen et al. 2006, 60.)	• Balance in the market is connected tightly with competitive companies • Innovations and conglomerates creating initial monopolies disrupt the market equilibrium • Monopolies can hardly stand for long as the creative destruction tears them down • Conglomerates can withstand the natural growth and downfall of companies with their huge resources

	• Large companies have a better chance to survive longer on the market • However the relevance of small companies must not be ignored
Companies as Imitators/ Imitator tactics (Korres et al. 2003, 293; Fagerberg 2005, 8, 15; Festré 2002, 138-140, 143; Rosenberg 2000, 69-71.)	• Imitators might have it easier in selling their products than first-comers • Innovations will surely result in imitators • Imitations are more difficult as well as important for further product development than Schumpeter gives them credit
Company intern and external research (Reisman 2004, 65, 71, 88-89; McDaniel 2000, 279, 281; Zachariadis 2003, 1, 6-8; Choi et al. 2016, 193-194, 197, 200, 202.)	• Their budgetary advantages give large companies also advantages in their research field • Small innovative companies might get incorporated easily by conglomerates • Applied research has to be conducted to actually create innovation • The internal structure and communication of the departments of a firm are very important for its economic success • A company's R&D department surely increases registered patents • A company's R&D department surely increases the revenue one way or the other

Illustration 1: Table of indicators

3. Case study China: Analysis of Huawei

3.1. Introduction

The times of huge inventiveness of the Chinese appear to be in the far past and somewhere along the way China was overtaken by the Western world and nowadays still some companies in China are behind in some fields due to lack of finances or proper organization. However now the will to become at least as good as the Western counterparts fills the country with motivation and passion which runs straight into countless research and development facilities. The state encourages growing innovation however the system is not entirely ready and well prepared for this rapid change in spirit. China has already changed a lot these past few years and had to adapt quickly to the new ways of ruling economy in the world as well as the omnipresent globalization. Its doors appear to stand wide open for networking processes and cooperatives with other successful industrial countries it can learn from and innovation and technology are perceived quite positively in China, everyone wants to be on the internet on her or his smartphone to be part of the opportunities offered nowadays to everyone for an affordable price. However the path to reach the same level of innovative production as other countries is not always an easy one but requires a lot of fiscal and personal risk for potential entrepreneurs and even the heavier spending on research by the government cannot speed up this process that is connected to numerous different factors such as the education offered and the spirit of the Chinese people. Although China's economic growth looked fantastic these past few years, the numbers are not as successful as they used to be and such a trend is also realistically not able to continue forever. China will have to improve and transform itself a

lot in the coming years to make up for its still missing successes and to continue the hopes so many people have in it. (McNally 2012, 742-743, Maxwell 2009, 53-54; China Labor Bulletin 2014, 7.)

China's biggest assets always were and still are its sheer size and numerous population. Measures of population growth control did not restrict the masses of Chinese to such a degree however as is the case for every other developed country the general population is starting to age more rapidly. Moreover is the population quite diverse which leads to problems. Rural workers flowing into the urban areas are a blessing and cause difficulties at the same time. An issue that also depicts the large differences between the life on the countryside and the living situation and standards in urban areas; differences that only become stronger over time. With the growing wealth and Westernization of course also these negative impacts can be seen, such as the growing inequality in the population. Moreover wages of workers are rising and foreign firms might decide to better produce their goods in even cheaper countries. Bright researchers and scholars might leave their home country behind to start a new life in more open and ideologically non-restricted countries but still the pool of work force and potential talent is unprecedented in China. Also the market size is remarkable and sure to draw investors and foreign firms even though the bargaining conditions for business relationships might be hard as the state and politics hold a considerable amount of power. (Coase and Wang 2013, 180-181, 186-187, 194-195; China Labor Bulletin 2007, 5, 9, 11-12; China Labor Bulletin 2014, 7-8; Wong and Cheong 2014, 389-390.)

Apparently health care was neglected during the 1980s and 1990s which lead for example to the SARS outbreak in 2003, issues that might dim the motivation of investors to move their production or R & D facilities to China. Moreover the private costs for health care increased and seem to be particularly unaffordable for the inhabitants of the rural areas as the goal is not anymore to help the citizens but to earn money through a commercialized health system. (Huang 2008, 249-252; China Labor Bulletin 2007, 10-11.)

The Chinese Communist Party and the unclear future development of the political situation in the country might be another factor to consider as to why the flood of entrepreneurial power and creative innovations is not to its full potential in China. (Coase and Wang 2013, 195.)

To catch up properly to other Western countries, particularly the US China would have to produce a radically higher GDP per capita which can primarily be achieved by increasing the output of innovations. However these are limited by the fields monopolized by the state-owned companies and as such by the partially limited market. Still China is expected to overtake the US as the largest economy at some point in this century. (Coase and Wang 2013, 188-189, 193-194; Johnson and Chuang 2010, 393.)

Another substantial weakness of Chinese production and export products is the void of famous, or any for that kind Chinese brands known to global consumers. The Chinese brands are exported worldwide but mostly bought for their low prices and lack innovative new products or proper marketing techniques. However companies like Huawei are trying to change this kind of view. (Coase and Wang 2013, 189-190.)

China already managed to introduce a number of innovative corporate management tactics to the world that appear to be working great however might be hard to grasp for foreigners, as is the case with Huawei. (Maxwell 2009, 60.)

3.2. Use of Schumpeterian theories on China as an officially communist country

The question might arise how I come up with the idea to apply the Schumpeterian theories to a

communist country, which the People's Republic of China officially is. In this chapter I want to justify the fact that I am of the opinion that the Schumpeterian theories, albeit created on the examples of capitalist countries and intended for their research still are fitting to analyze the case of contemporary China, which I define as the time after the Cultural Revolution had already ended and with the beginning of *gaige kaifang*, the Chinese economic reforms and opening process after the years of seclusion in 1987. However in the period after the Cultural Revolution beginning with 1976 reformatations were already happening which laid ground for the large economic reforms to come, however only in the 1980s the desire for democratization seemed to be knowingly vocalized but in the context of socialism. Still due to the forced but natural orientation on role models the Western societies and systems became a point of interest. Cai speaks of a: “...*retreat of socialism...*” and a controlling “...*logic of capital...*” but implies that a long-stretched conflict also in the minds of people is still dragging on. (Quotes, Cai 2014, 86, 103-105.)

Leaning on Xing and other historians who consider the fact that China nowadays can already be considered a market economy and capitalist enough to overlook the leading communist political party for the sake of focusing on economic theory and growth I want to present first a general overview many economists or researchers concerning this topic have. Xing distinguishes four phases in Chinese history, from which the revolutionary socialist China is simply one, however since 1987 and numerous economic reforms this episode has been left behind in history. Nonetheless Xing claims that the socialist period prepared the way for the economic successes China reaps nowadays, as did the numerous capitalist elements included in China's economic development afterward. Coase and Wang even go as far as to say: “*China became capitalist while it was trying to modernize socialism.*” (Quote, Coase and Wang 2013, 154.) However Chinese scholars and economists tend to be slightly more careful to call China a proper market economy as personal connections have huge influences on business and the state has an enormous impact in the planning of economy. (Xing 2010, 6-10; Huang 2008, 8, 276; McNally 2012, 742-744; Coase and Wang 2013, 154; Tao and Chunbo 2015, xxvii.)

Concerning the communist party so has to be said that one must not confuse the leading party and the ideology of politics and the state. Per definition the Chinese Communist Party cannot even be considered communist anymore as most communist ideals it stood for are long left in the past. China is clearly the best example that shows that a seemingly communist regime can allow market reforms and liberties, particularly as the party and politicians profit from economic success as well as anybody else. The main difference to other former socialist countries is that the previous ideological and political system was not entirely replaced but step by step and with a very pragmatic mindset reformed. In the case of China this process also turned out very economically successful in the end and up until now in comparison to countries which switched their entire systems and still suffer from large problems. The motivation to transform the system from the top and from the inside also derived from impressions the political leadership could gain abroad in the western world outside of China. This transformation did not go on without failures or setbacks but finally turned a socialist state through numerous reforms into a functioning market economy. However the only aspect that did not change was the supremacy of the Communist party which allows no parties next to it and guides economic development heavily but to a lesser extent than before, according to some sources. Another critical point is the fact that the party depicts itself as invulnerable and criticizing it is dangerous which is not beneficial for the capitalist spirit. (Coase and Wang 2013, 154-156, 174-177, 193.)

Huang is one of the scholars who dig a little deeper: He explains the traits of a special capitalism with Chinese characteristics, also called Sino-capitalism. First the definition of market economy has to be fixed. A huge indicator is the existence as well as the size and activity of the private sector but this already leads to complications in one's research. In China it might be incredibly hard to find out how a company is owned sometimes to protect the company, as private-owned companies underlay

many restrictions that only started losing up in the past few years. A good indicator according to Huang is the consideration whether general managers keep their positions for a rather long time or the opposite. In case of a short duration of general management it is clear that the company is state-owned, as the government likes to shuffle the positions new in shorter periods of time. (Huang 2008, 8-12, 24; McNally 2012, 744.)

Another clue to consider the size of the private market is the output-based measure. However to assess the policies for the private market input measures should be used, as these show fixed-asset investment capital which is controlled by the state and depicts changes rapidly. To conclude in the case of China the assessment of the actual size of the private market diverges greatly, depending on whose surveys and indicators one tends to believe. In 2005 the private sector approximately made up 22 per cent of the industrial value-added. This size of a private sector is, even when using the highest possible number some might claim it has it is still fairly small comparing to other market economies but it has expanded and still is expanding at a fast rate and making up about 65 percent of the country's GDP as well as a large chunk of the economic development. (Huang 2008, 12-13, 16-20, 277-278; China Labor Bulletin 2007, 5.)

Furthermore recently an entrepreneurial aspect from the private sector managed to overcome the resistance of the state with their own capital as well as extensive networking underneath each other which leads to a system presiding from the top and the bottom at the same time. This system does not run without friction all the time but shows a broader line-up of varying interests. According to some scholars this might still lead to problems: As the private market is fairly small, the state executes control or at least heavily influences a lot of sectors and shapes the economic future of the country in contrast to the rule of free market in most other capitalist countries. However the power of the party allows it to adjust economic policies fast and the control over numerous conglomerates in critical sectors helps with the important financing of these fields as well as shaping the economy into a profit-oriented future. Still private companies are not able to enter these specific state-controlled markets as the state-owned companies will always have advantages in comparison to the private ones, even though the state-owned companies might be led and managed poorly. The system of influence is not perfect but one must not forget that China is still developing which it does under the tight supervision of the state which however seems to lessen over time with a growing of the private enterprises which leads to growing economic developments. (McNally 2012, 742, 744, 747-749, 752-755; Coase and Wang 2013, 136-137, 175.)

Huang claims that the capitalism with Chinese characteristics ruling in China is based on personal relationships (*guanxi*) as well as corruption and bribery. At first sight one might be prejudiced against too close relations in business, however this feature reinforces networking and might speed up economic development in connection with political interests as well as allows small or medium-sized firms to survive easier on a contested market. Moreover takes the state the reins in deciding how the country is going to develop in general and economically, not the market. Larger government-supported companies always have better prospects than small entrepreneurs. In a comparison between provinces one can see that entrepreneurial capitalist provinces perform far more efficiently than the ones controlled more tightly by the state. There exists also the problem of competition between regions in China, as local authorities all promote their location and court the central government as well as investors to move production into their districts. Economic and technological development zones are preferred points of settling and establishing new production facilities or new companies in general. Huang makes a comparison on how close China is to the other East Asian countries capitalist-wise. South Korea for example leaned heavily on private companies in its most intensive process of economic growth. In comparison to its fellow East Asian countries China invests about half of its GDP – this number is significantly higher than that of South Korea which has an investment rate of about 30 percent of its GDP. However, in the case of South Korea these investments are undertaken by primarily the private sector, whereas in China it is the public sector that invests the most, which is a very Latin American capitalist characteristic but the opposite of an East Asian one. Another difference is the fact that other East Asian countries

established more of a welfare state for their people, whereas China's government favors particularly civil servants and not all of society equally and never properly adjusted the rural poverty line. Another practice of the Chinese state is nationalization of land and forced evictions. Moreover China has problems with a state of law which is not existent as such as well as a state-led education system which suppresses innovative voices which would be incredibly important for the future development of the country. All these practices are not characteristics of capitalism or a free market. (Huang 2008, 236, 238, 279-285; McNally 2012, 744-747, 750-752; Coase and Wang 2013, 139-141, 193, 199.)

Nevertheless China is one of the few East Asian countries that, once it rose, was very quickly incorporated into the global economy and scientific networks as well as bearing still a huge potential that has not yet unfolded entirely and cannot be missed anymore. The innovative mix of developing nation and new institutionalism as well as authoritative state has never appeared as a capitalist country before. China's companies are able to use the more and more developing stock market of China which is gaining importance worldwide. China's joining of the WTO in 2001 did a lot to open its economy wider to foreign influences and facilitated trading with the country. The use of China's currency and internationalization furthermore allows the Chinese state a means of developing the economy further and might even develop into a serious competitor of the US-Dollar. So McNally is of the firm opinion that China can be called a capitalist country just not exactly the kind we are used to and have seen before but a new form of capitalism that might seem inconsistent but is still legitimate. (McNally 2012, 744-747, 749-750, 756, 758-764; Coase and Wang 2013, 135.)

3.3. History of the company

Huawei Technologies was founded in 1987 in Shenzhen by Ren Zhengfei as a private company with just 20000 Chinese Yuan as a starting capital and at least four other shareholders as the regulations prescribed and as he could not afford the basic seed capital on his own. Ren used to be an engineer for the Chinese military with only little knowledge of business so Huawei started with little expectations from the market as a small seller for telecommunication appliances. Ren had from the beginning the big entrepreneurial dream to turn Huawei into one of the largest companies in the industry. He took a great risk with founding his company, as did many during the time and he, as we know today, succeeded against every expectation which makes the Huawei story particularly intriguing. (Tao and Chunbo 2015, xxi-xxiii, xxv-xxvii; Fan 2011, 834.)

At the time of Huawei's beginnings China had only recently started the process of catching-up and was behind on many levels especially in the telecommunications field which it tried to compensate through desired foreign involvement which overlapped with a great developmental leap forward in the former telecommunication technology. The foreign firms established the basics for improving the telecom market but did not actually improve it for the Chinese population as prices were unaffordable and the foreign services lacked heavily which motivated numerous Chinese public and private firms to try and replace these inadequate methods and services. Huawei was one of these companies which improved the Chinese telecommunication networks lastingly after heavy fights with the foreign giants active in the field for application locations and clients which demanded sacrifices from not only the founder and higher management but from many employees who were forced to work in remote areas. Since then the company has created countless jobs for the Chinese population as well as generated over 120 billion Chinese Yuan in tax money for the Chinese state. (Tao and Chunbo 2015, xxiii-xxv, xxxiv, 14, 36; Luo et al. 2011, 67-68.)

In the case of Huawei as a private company in China the location in Shenzhen turned out to be essential for its development and endurance as this area was a free economic zone designed for experimentation where public as well as private companies played through numerous economic

concepts other than planned economy. Except for the location it still took Huawei until the year 1994 to establish itself in the market with its first telephone switch system that they had to construct themselves as this particular know-how was not available from foreign firms. This was a high-risk investment as nearly all of the company's resources at the time were consumed by its creation and incredible efforts by all employees were necessary to design and construct it. From this moment on Huawei could proudly sell its own created product and drew attention through its excellent customer service that could not be compared to the foreign companies offering their telecom services in China. Huawei did not cease to develop other core technologies in the field of telecommunications and smartly saw to it that it stayed on top of the innovation chain to not fall behind on the newest telecom gear which always provided it a place on the top of the Chinese telecom providers. However still a lot needed to be done: Huawei was in no position to compete against the world's best at the time as it lacked size and proper management to achieve these goals however it got inspiration and help from American companies and numerous Western ideas as well as management and reformation techniques and after numerous larger reorganizations which allowed it to take a closer step to becoming a world leading firm with the combination of Asian and Western practices that is not afraid to constantly improve and develop further to adapt to changing market opportunities. (Tao and Chunbo 2015, xxviii-xxix, 15-16, 27, 57, 61, 63, 144; Luo et al. 2011, 68-70; Fan 2011, 834-835, 837.)

Other stones in the way of Huawei's rise were the difficulty to attract highly educated and outstanding personnel as these preferred publicly owned enterprises at the time which actually has changed little over the course of time and which was the main drive to introduce the employee shareholder system to Huawei, whose value grew slowly but steadily. (Tao and Chunbo 2015, xxviii, 48.)

Nowadays Huawei's founder does not plan for the company to become the global number one in telecom industries but sees to it that the structure of the company improves further. This is for example executed by a shareholding system for employees which used to be illegal in parts of China and occasionally still is. Another emphasis is the constant improvement of a core value which is particularly focused on customer service as well as numerous other values implemented by the company and responsible for its huge growth and its remarkable successes over the past few years. (Tao and Chunbo 2015, xxvi-xxvii, 16-17.)

Huawei will always be in the constant struggle of having to fight for its identity: In China as a private company that is still very valuable to the country's economy and globally for being a Chinese brand that as such is legitimate and grew out of the negative opinion people usually have of Chinese products. However another negative impact are the news Western medias usually spread concerning Chinese companies as these are considered not as open as the ones of other countries, although Huawei has a hugely Westernized organization and corporate management techniques. However Huawei has not implemented all Western ways of corporate business as it refrains from going public and will not get involved in venture capital. (Tao and Chunbo 2015, xxxiv, 12-13, 56-57, 209.)

3.4. Economic successes

I want to introduce the economic successes of Huawei by a demonstration of the financial numbers of the last six years which indicate how the company is doing economically. The revenues of Huawei rose constantly. Starting in 2010 the revenue was 182,548 million CNY, in 2012 220,198 million CNY. In 2014 the revenues came up to 288,197 million CNY and the number had climbed significantly until 2016 with a value of 521,574 million CNY. Concerning the net profits of the company so can be seen that the value rose, however there was apparently a small throwback in the

last year as the profits were not significantly higher as the year earlier. In 2010 the profits were with 24,716 million CNY at a peak of the time, in 2012 they had reduced to only 15,380 million CNY. In 2014 the profits were 27,866 million CNY, in 2015 they had risen up to 36,910 million CNY but only slightly in 2016 up to 37,052 million CNY. The total assets of the company rose steadily over the years and culminated in the value of 443,634 million CNY in the year 2016. The current liabilities come up to 68.4 per cent in 2016 which in numbers turns out to be 239,271 million CNY and did not deviate from this number heavily over the course of time, the total liabilities being 303,501 million CNY. The owners' equity makes up 140,133 Million KRW in 2016 which shows a rise compared to the year 2014 in which the value had been 99,985 Million CNY and to 2012 were the value had been 75,024 million CNY. The company's goodwill comes now up to 4,334 million CNY. (Huawei 2017, 8, 19, 50-52, 58, 77; Huawei 2013, 4.)

China became the country which exports the most worldwide and the second strongest force of imports worldwide. (Coase and Wang 2013, 150.) In this scenario Huawei manifested itself as the second largest distributor for telecommunication services in the world nowadays. (Tao and Chunbo 2015, 227.) However the company does not only offer telecom services in cooperation with telecom carriers of various countries but also distributes mobile phones, smartphones and cloud technologies. Cloud technologies are particularly future-oriented and a thing of great interest to Huawei as they allow faster information transfer and secure data storing. Connected issues are the preparation for the introduction of 5G technologies. However also the smartphone series P9 produced by Huawei was an economic success as more than 10 million devices were passed out to sellers. Also other newly created business smartphone series were received positively and the smartphones delivered around the globe increased from the year 2015 to 29 per cent in 2016. This indicates a market share of 11,9 per cent for smartphones in 2016. Particularly appreciated in these new smartphones is an advanced camera technology which originated through a collaboration with Leica. The most revenue was generated in China itself. Another project of Huawei is the establishment of e-government platforms in China which was already successful in Beijing. Huawei deems it very important that it is recognized as a premium brand and the value of the brand is rising from year to year. (Huawei 2017 A, 10-12; Huawei 2017, 3-7, 21-23, 34-37.)

In its baby shoes Huawei was a small and mediocre company without much to offer except for cheap products and dedicated customer service that went well in the rural areas. Later on Huawei was in 2010 the one and only private Chinese firm to be found in the list of Fortune 500 companies. (Tao and Chunbo 2015, xxvi, 207.) The social platform Fast Company selected Huawei as being the fifth most innovative company on the planet in 2010. (Foster and Reinsch 2010, 301.) In 2008 Huawei, with other firms such as Google and Walmart was chosen for the title of world's most influential firms. (Luo et al. 2011, 68.) Huawei has an income of about 16.5 billion US-Dollars every year. It established 14 local European branches as well as 12 research and development facilities, which means that Huawei does not only want to improve its profits but also create jobs and collaborations worldwide. Through this tactic it managed to boost its sales outside of China to up to 72 per cent of its sales through contracts. (Tao and Chunbo 2015, 179, 208; Fan 2011, 835.)

In 2017 180000 people were working for the company in more than 170 countries and at times the company held the global record for the application of patents such as in 2008 were 1737 applications had been registered from Huawei. Huawei managed to be the company with the most patents in China in 2015. In 2016 Huawei held the second place for most registered patents in China and seventh most in Europe with a number of over 62500 patents registered. From these employee numbers about 35000 are non-Chinese citizens who also follow the company values. This total number of employees is made up of about 7.5 per cent Asian workers, nearly 5 per cent Europeans, 3 per cent South Americans and 1.7 per cent North Americans as well as nearly 3 per cent Africans. About 80 per cent of Huawei employees have a completed tertiary education and the majority is between 30 and 50 years old. Only 20 per cent of the employees are women, however they tend to

get a preferred treatment for promotions. Huawei can proudly say that it covers one third of the global demand for telecommunication services which is impressive for such a competitive field. Mostly local people are functioning as leading personnel abroad. (Tao and Chunbo 2015, xxvii, 24, 27, 42-43, 66, 75, 100; Huawei 2017 B, homepage; Huawei 2017 A, 29-32.)

Huawei was the very first company to install a system for mobile communication in the Arctic Circle in the duration of only two months and under terrible working conditions. Huawei gloats itself on working in numerous areas with difficult working conditions, for example also in high altitudes on the Mount Everest, and in areas of political crisis, all in the name of improving telecommunication networks and spreading opportunities and connectivity for future customers sometimes even at the cost of employees lives. This shows that Huawei is willing to change the world one by one customer in regions where other companies are not willing to go. A joint venture with Global Marine Systems Limited even offered Huawei the opportunity to establish telecom services under the ocean specifically for submarines. Huawei's services are particularly popular in regions of unrest or in developing regions as its services are fairly cheap in comparison to its competitors in the branch and very reliable. Moreover are Chinese citizens or former Chinese living in these areas inclined to support Chinese telecom firms and products as well as facilitate the negotiations or constructions. Huawei furthermore has the goal to connect the entire world and provide secure and stable internet and telecom services to everyone in demand. (Tao and Chunbo 2015, 28-32, 207; Foster and Reinsch 2010, 302; Luo et al. 2011, 68, 71; Huawei 2017, 47-48; Huawei 2017 A, 4-6, 72-73.)

3.5. Catching-up tactics

The term of catching-up usually implies that one country wants to become more like a leading country or more leading countries in terms of economic productivity and income. (Fagerberg and Godinho 2005, 514.) It also hints at the fact that once the catching-up is done, own research is primarily conducted and dependence is lost. (Fan 2011, 831.)

However first a developing country has the catching-up to do. This simple fact already implies certain downsides such as having to follow leading companies which are hard to outrun due to their technological advantages on the market as well as the additional costs needed to be able to manufacture on the same level as them. However seeing other firms deal on the market and copying their tactics or learning from their experiences can reduce time and own negative happenings. This was the lucky case for China as they did not only have Western examples to copy from but also numerous East Asian countries which already took the step on the road of catching-up. Moreover in the high-tech industries changes are common and traditional firms might have spent a lot of money on manufacturing facilities that are becoming outdated but are too expensive to reconstruct for newer technological requirements which later-comers can implement from the beginning. In general nearly all developing countries during the catching-up process imitate products and processes from advanced countries for example through reverse engineering to later transform them and improve them if possible and finally birth innovation on their own. Before this happens they can look out for technological innovations adaptable for them in multinational firms, domestic companies or they do their own research efforts. However China was limited in the account of simply copying devices or technology as intellectual property rights were already established and in place and could cause juristic problems for companies. (Fan 2011, 832-834; Wong and Cheong 2014, 390.)

As soon as basic catching-up is done and was successful a country should see to it that it births its own innovations as quickly as possible as this is the only way and requirement to be able to aspire to maybe one day reach the top of telecom providers. To achieve this, higher education that allows as well as encourages free thinking should be highly pursued. Weak intellectual property rights also

are issues that have to be enforced and resolved if China wants to develop into a truly innovative country. As products are designed, manufactured and sold that are accepted and desired by the indigenous market newer technologies will spread faster and also create more economic demand for the products. (Johnson and Chuang 2010, 385-387; Fan 2011, 837.)

At the time after the Cultural Revolution there started to exist in general three types of firms in China: Foreign companies, joint ventures made up of foreign and Chinese cooperation and purely Chinese firms. However in general Chinese firms that finished their catching-up could only aspire in their more developed phases to form alliances or equal joint ventures with foreign firms or successful partners in their fields as these already properly developed firms usually do not want to support companies which have not yet reached their level and with whom collaboration does not make that much sense as it would be one-sided. Another issue for private firms was the fact that the Chinese state preferably supported its public enterprises and did not take great efforts in helping the private companies also appearing at the time, in contrast to other East Asian countries in which the state primarily supported private firms. However these issues have been reduced over time and now private companies are considered important as well for the Chinese economy. The states focus on public enterprises also led to a dependence and heavy linkages between these two sectors, where interests easily overlapped. Moreover not all sectors could be supported equally but the most promising ones had to be chosen and invested in, again with accordance to the demands of the entire nation. Also on a regional level the representation of the state has to follow the bigger goal of innovative independence and economic growth, for example by introducing technology and research parks and providing useful clustering locations to generate knowledge and cooperation. These incentives however allow it China to experiment with the idea of progress and try out policies in a controlled environment to research which ones are most likely to work and improve China's economy and offer valuable feedback. (Tao and Chunbo 2015, 18; Fan 2011, 837-838; Wong and Cheong 2014, 390, 393, 397; Lemoine 2013, 18.)

As China's firms were not at a high technological level they were prepared to outsource certain steps they could not conduct professionally on their own to more developed countries until they managed to administer these steps on their own. Support from the state was offered insofar as it saw to it that foreign companies which moved their production facilities to China to produce their goods more cheaply than in their home countries were forced to share at least some of their technological know-how and also train the Chinese labor force they used, for example through joint ventures set up by the government. This enabled Chinese firms to make use of the educated workers filled with foreign knowledge as well as the technological transfer enforced by the state. To take matters into the hands of the public and to address every single citizen slogans and strategies for medium- and long term technological advancements are advertised by the state and financed with state money. The goals of this campaign are not to be reliant on foreign technology as much as now, to focus on future-leading technology such as nanotechnology and be able to research in these directions on one's own as well as replace foreign technology by indigenous one and develop more power concerning intellectual property rights breaches conducted by Chinese firms, all these goals should be realized until the year 2020. Due to China's size and potential more than one catching-up technique was realized in the country. (Wong and Cheong 2014, 391-393, 396.)

Multinational firms, mostly from more developed East Asian countries such as Japan and also Korea and Taiwan were viewed favorably in China, however the state saw to it that technological transfer took place and the Chinese labor force was not simply used to be part of foreign supply chains and assemble products for export reasons without any benefits for the country. However since China managed to become serious competition itself it also started to enter partnerships with multinational companies. However some multinationals also took entire control of their organizations in China and dissolved their joint ventures with Chinese companies. (Wong and Cheong 2014, 392; Lemoine 2013, 14; Defraigne 2013, 31, 35.)

China's economic development zones all strongly desire the capital of foreign companies. Early on only the rich Hong Kong and Taiwan invested in China but since the 1990s many foreign countries recognized the advantages of investing in China, moving their production facilities there to produce and assemble goods cheaply and although China is now very economically successful the numbers of foreign direct investment never cease however the proportional importance starts to decline in comparison to what the country generates on its own. Still foreign companies are very present in their particular fields in China, not Chinese firms and as such also export heavily to their own country or the global market in general. Cheap human capital costs, agreeable regulations and a stable political situation as well as a practical location with proper infrastructure are the most prominent factors for what draws foreign countries to China however China most likely does not profit immensely from it considering the technological spill-over effects but it does improve the general skills of the rural workers. What is more a growing and rich Chinese middle class starts to appear on the radars of foreign companies which discover China as a growing outlet market with a thirst for foreign brands and products. (Coase and Wang 2013, 149-151; Lemoine 2013, 16-17; Defraigne 2013, 30-31, 40.)

A reason how China managed to turn the received FDI into mostly positive output and not become and stay dependent on the giving countries has to do with the role the government played in this matter. It spent capital into sectors with great future such as high-technology industries as well as urging companies to own factories for the production of foreign goods and invest in research and development to assure some sort of independence and development on its own. Furthermore did the state see to it that the numbers of inward FDI included in the GDP stayed low. (Wong and Cheong 2014, 385-386.)

For a few years now foreign companies fancy setting up cheap facilities in Chinese science and development parks to work together closely on certain topics and create knowledge clusters. On the one hand this offers China foreign capital and knowledge as well as closer collaboration with promising breakthroughs for everyone involved. Work places are also created through this development as well as possible outcomes of setting up high-tech production facilities in China which can be exported more expensively than conventional Chinese products and which might be able to penetrate Western high-end outlet markets. This process also might allow the foreign firms to enter the market in the developing country more easily. Negative voices may claim that these research facilities were mainly installed to research and breach the Chinese market. (Maxwell 2009, 60-61; Fan 2011, 833; Defraigne 2013, 35.)

Not only foreign companies are creating such knowledge and research clusters in China but also the government itself to improve the country's research and development potential. Another helpful measure is the rising governmental expenditure on research and development. In 2010 the percentage of GDP was 1.4 however the desired number for 2020 would be 2.5 per cent. However this money should be used to research elementary technology and not necessarily go into short-term improvements of single products. (Defraigne 2013, 42-43.)

3.6. Indicators

In the following chapter I want to use the before in the analytical framework established indicators to explain the innovation processes of the Huawei company which make it so incredibly successful in nowadays world. These indicators will describe the methods Huawei uses to be so very successful nowadays including management tactics as well as customer treatment over the emphasis of gradual change, balance and responsibility as well as compromise and constant learning and searching for new business opportunities. Afterward I want to go into more detail of the Schumpeterian entrepreneurial aspect the company shows. What must not be left out is a short chapter on Huawei's competitors in the field as well as a mention of Huawei's imitator tactics and

the research Huawei conducts to develop its innovative products. You will find that the order of the indicators presented changes compared to the second chapter. This was done to make the entire demonstration more comprehensible in the second as well as the third and fourth chapter.

3.6.1. Innovation tactics and productivity growth

Innovation tactics Huawei uses are derived from the fact that a strong and creative entrepreneur founded the company and still leads it but at the same time acknowledges that leading is not an easy thing to do as it is difficult to keep the spirits high all the time and again and again motivate employees to give their best. He introduced a particular method of management which transforms ideas into reality and provides control and implementation from the top to the bottom supported by the higher management ranks. However the even more important feature of management runs in the opposite direction: Ren is of the opinion that the customer is king and the most central piece of the company and as such leads the firm into potential new directions: The customer services influence and lead all the other departments in the company which mostly exist to serve the service fraction. Every employee is part of the bigger Huawei picture and appreciated for the particular role they play which creates a feeling of dedication to the brand and motivation to continue their highly successful road. The company's core values are suggested to every employee in the beginning of their career as well as are enforced over and over which helps put everyone on the same side and work hard for the goals the company has. (Tao and Chunbo 2015, xxx-xxxii, 24-25, 51.)

“Huawei advocates that in an organization top management should have a sense of mission, mid-level managers should have a sense of crisis, and grassroots workers should have a sense of hunger.” (Quote, Tao and Chunbo 2015, 47.) This quote describes the attitude and place every worker for Huawei should hold dear and this concept also allows it the company to run smoothly and motivates everyone to follow their purpose and furthermore offers glimpses into possible opportunities of advancement in the company hierarchy. The upper management level should be dedicated to being inventive and future oriented, whereas the middle management should be role models for the grassroots workers and see to it that the goals implemented by senior management are realized whereas the workers should aspire to come into a position of middle management through hard work and pursuit of more. This system appears as a corporate hierarchy but to still give every single employee a voice to be heard online forums inside the company were successfully introduced and offer useful feedback for the management. These opinions of employees are rather important to Huawei as they better be collected and accepted in a controlled way than suffocated and punished and potentially twisted by the media or spread by bitter employees who see no changes away from negative issues. These conflicts inside the firm are also being brought to daylight by the so-called Blue Army Organization, which looks out for possible faults in the firm and critically questions decisions made by the company. What is more the shareholders of Huawei are able to democratically elect the board of directors. Concerning the top management and the mid-level managers collective decisions have to be made as to who gets appointed to these positions. (Tao and Chunbo 2015, 47-48, 80-81, 96-97, 107-109, 213; Huawei 2017 A, 13-14.)

These elected managers have to possess the virtue of tolerance which in the Huawei universe means that they need to be able to understand different kinds of people and bring them together to create something new without tears or conflict. Different opinions are welcome and only have to be focused and turned into positive and productive energy. It also means that small mistakes or thinking outside of the box are welcome features and must not be considered a grave weakness. The most important attitude after a failure is to bounce off and try again. In general managers of Huawei do not possess unlimited power and freedom but are indeed very restricted in their acting as this is the task of the grass-root workers. (Tao and Chunbo 2015, 109-111, 144; Huawei 2017 B, homepage.)

The higher managers and the upper echelon exercise power through different means such as in the form of coercive power which keeps the company running and creates the foundation walls for

allegiant and ambitious personnel. The motivation to perform well and reach for the stars or in this case higher bonuses and better jobs are given by remunerative power. However normative power ensures Huawei that its employees will like working for this particular company, will not be as easily lured away by competitors who seek the well-trained manpower and will be proud to work for the firm with all the values it stands for. To furthermore guarantee a more flawless and sustainable management process tools are in place to measure the effectiveness of the process and to furthermore evaluate the employees according to their skills and compliance with company values. (Tao and Chunbo 2015, 120-121; Huawei 2017 A, 20; Zhang 2013, 61-63.)

The fact that employees hold company shares, a concept which is also used more frequently in the American IT branch, reinforces the feeling of dedication to the company as the firm's value is not such an abstract or irrelevant concept in this case. Moreover is the shareholder system for employees a means to split up the huge responsibility coming with a huge enterprise which has to be run and cared for. Through this system no one leaves empty handed as benefits are being split as well and everyone gets a fair share according to their work load and the responsibility they present in the company. Ren himself holds only 1.4 percent of all shares and his is the biggest one. All the remaining shares are kept by about half the employees who make up over 81140 people, also called the Union of Huawei Investment & Holding Co., Ltd., as of the end of 2016. Ren and the other shareholders are the decision makers in the firm and are represented by a commission. These employees are rewarded for being particularly hard-working and dedicated to Huawei's goals which could motivate other employees not yet in this scheme to attempt to excel and be rewarded as well. Through this system the employees are also content with more radical restructuring and reforms as these are only implemented to improve the company as well as the company efficiency and the value the firm holds, even if these practices mean that their jobs themselves might be in danger of being further occupied by them. This massively shared system is hardly seen anywhere in the corporate world especially not in China. (Tao and Chunbo 2015, 44-47, 85, 180-181; Huawei 2017, 99-100.)

However the shares of employees are not without problems in China's economy as some institutions consider them even illegal. Apparently irregularities exist in the shares of employees at Huawei as these written certificates are kept by Huawei and not actually given out to the new owners. The system of employee shares gives the impression that Huawei is a private company owned by its employees and the firm states so in its financial reports. According to Huang other telecom companies of the Shenzhen region own Huawei shares as well but it is unclear how many. Moreover some employees might consider the system not fair, particularly younger employees who have not worked for the firm a longer time. Now that the system is introduced Huawei has no possibility of changing it as employees might leave the company without this incentive. Zhang also claims that there is no legal power behind the shares and the employees are not really involved in any important decisions. (Huang 2008, 11; Huawei 2017, 99; Zhang 2013, 27-29.)

Even without a share in the firm the employees as one of the heart pieces of the company are able to gain bonuses and benefits through hard work, which also fuels competition in the company. A basic salary and extensive insurance is open for all employees equally and made up 1,69 billion US-Dollars in 2016. (Huawei 2017 B, homepage; Huawei 2017 A, 34.)

Ren emphasizes the constant learning and improvement processes a company has to undergo particularly one in such a highly competitive field as producing and distributing electronic gadgets where no limits can possibly be set by imagination and hardly by construction, realization and creation. All these steps are not easily obtained but require hard work and effort to realize. Another factor that must never be forgotten is the rapidly changing technological environment in which we live nowadays and which births new ideas and methods around the clock. (Tao and Chunbo 2015, 27-28, 103.)

To ensure the employees have constant access to training programs they can use to their own liking a company intern e-learning platform was developed. More training is offered regularly by the

company and adds up to nearly 30 hours of further training each employee utilized in 2016. (Huawei 2017 B, homepage; Huawei 2017 A, 32-33.)

The rule of constant learning and change also has to be true for the company as a whole and might well be the factor that gives new companies an advantage in comparison to old companies that look back on a long history of tradition, as these tend to make a firm inflexible and stuck in old concepts they are unable to shift and develop in face of new times, opportunities and new consumer desires. A key argument to be prepared to endure constant change is the factor of openness a company has to have and live by. Only by keeping an eye out for changes and opportunities including partnerships and cooperation's a company can hold one's ground in the globalized world of today and improve conditions for itself, the competition and the consumers. Foreign influences must not be dismissed if they can also be incorporated and improve the company in some matter. This is also the case in the pursuit of foreign sales markets where the regional conditions have to be put into consideration, foreign laws have to be abided and local customs must always be considered. However Huawei sees these factors as challenges that can be easily managed and the greater gain of new markets that follow after doing so. To recognize all these factors a grand openness is required that Huawei can allow itself now that it is an established force in the telecom market. (Tao and Chunbo 2015, 61-65, 69; Luo et al. 2011, 69.)

This rule of self-development and change is also connected to the term of grayness, which Huawei uses to depict the balance between development and the reassurance of stability. Changes have to be made but in a proper time and space which has to be coordinated and implemented carefully. The bigger picture must never get out of sight or must be adapted accordingly to the developments of the market. Grayness is as such the result of compromises and adaption to always new situations one is confronted with. However grayness must not be used in the fields of the other Huawei core values which have to be followed immaculately and are no objects to change. It also refers to the grayness in employees as in their needs and desires which might be conflictive or at least not completely linear all the time, as well as in the handling of employees who made mistakes but are allowed to correct these faults and try again. Moreover it stands for the spirit of the collective and motivates the leaders to leave no one behind and only enrich oneself as well as refers to the way personnel is lead which is also a constant factor of change. The verbalization of grayness alone including everything it stands for already transforms the way people think and approach certain topics. An open mind is a feature every Huawei employee should carry within during all times. (Tao and Chunbo 2015, 104-106, 111, 113, 123-125.)

This is connected to the company value of constant self-criticism: for example even though Huawei attempts to register numerous patents the higher management sees clearly that this number does not mean much for the actual improvement of the company or higher profits. In times of doubt and in the eye of restructuring the company elite gets together and considers its faults and weaknesses carefully to better prepare for a second attempt. However the process of self-criticism is also necessary over and over as otherwise the company declines and its spirit dies as reform stops and little faults add up and bring it down from the inside, a tactic that the Chinese Communist Party strongly propagates among its citizens. Not letting go of useless traditions, being stuck in history and stubbornness slowly destroys companies, a faith which Huawei has seen many times during its existence and which it refuses to share anytime soon. Repetition appears to be a big trap a company can step into: mindless repetition is suicide and without change no progress can be made and no company can withstand the nagging tooth of time as living only on the royalties of past innovations is the most likely way to wither and die. But in constantly questioning ones former successes and in trying to improve them and reflect on them from different perspectives as in inviting other people to do so as well one can make a difference for an idea or a value, one only has to steadily look out for any backlashes, which is best done through even more self-criticism and reforms. This also includes the before mentioned critics of other voices in the company which must not be dismissed but also evaluated and put into consideration which actually may count as self-criticism as well as all the employees do work for Huawei and self-criticism is always better than just general criticism. Also

criticism from outside the company and from competing firms must be taken into account as sometimes one is oneself too involved in one's own business and cannot see one's faults as clearly as someone standing on the outside looking in. Only self-criticism wakes the best in the employees and allows them to perform exceptionally. Managers of Huawei even have to attend self-criticism meetings in front of a committee and their abilities to perform properly are directly linked to whether they are considered proper for their jobs or even jobs with more responsibility or not. Also every department has a meeting dedicated to self-criticism every month where self-criticism is exercised under clear rules and with cool heads. What is more the upper management is supposed to take an oath declaring their good intentions concerning their connection to Huawei as well as factors concerning their personal life that must be kept separated from the company including the CEOs. This also illustrates the heavy responsibilities the management has to bear and how much really depends on it that such measures are valid and useful. However this form of self-criticism mostly concerns the theoretical aspects of the company such as employee loyalty and the persistence of the company values but criticism of organizational issues are an entirely different matter and mostly are implemented to enforce more radical changes and reforms which must be conducted very carefully to not disrupt delicate balances in the ability of the company to successfully do its job and manufacture goods and produce great customer service. Apparently this system with the mindset of self-criticism works very well as the Huawei company claims that this is one of the distinct factors that allowed it to become what it is today and the factor that other companies have failed on their way. However not only self-criticism is used but also open criticism of employees who commit faults and who are supposed to remind other staff members not to make the same mistakes. This usually is accompanied by reducing the wages of the accused employee as a further punishment. (Tao and Chunbo 2015, 66-67, 79, 129-133, 135-136, 138-141, 145-151, 154-155; Zhang 2013, 66-67.)

A further important aspect of management and leadership that Huawei has incorporated as core value is the ability to compromise so to consider every possibility and interest and give in to other better opinions if necessary and also offer compromises if possible. This is not only the reasonable thing to do instead of breaking off negotiations completely and creating a lose-lose situation but also shows empathy and pragmatism which is necessary to survive nowadays in the business world and on the smaller scale of keeping a company together. These compromises are used to come a step closer to one's original goal and will appear again and again further down the road one marches on and always have to be newly negotiated. However of course the way of compromise does not apply for the other Huawei virtues which have to be executed in all fierceness. The way of compromises also seems to make up the history of Huawei as it tries to avoid any extremes and stays in balance as good as possible, a process which never finds an end. Some people or companies might claim that compromise is weak as one does not pursue one's goal with all force but on the contrast without compromise nothing would come to pass in the business world and one would end up alone very quickly. (Tao and Chunbo 2015, 87-88, 90-92, 95.)

The hierarchy in the company is standardized for every location to guarantee the best possible working and communication procedure. Moreover the middle and higher management employees are supposed to work temporarily at different locations and thoroughly experience the importance of marketing and fulfilling consumer wishes. (Zhang 2013, 3-4.)

The centralization of the desires and realizations of consumers' wishes is another huge part of the explanation of Huawei's constant growth which was put into focus after 1994 when Huawei had launched its first own product. This goes against the usual way of thinking in economics: The shareholder value has to rise no matter what. In the case of Huawei the customer is king and the company is built around that concept. Better to please a customer than the manager, particularly as the consumers' wishes are more easily fulfilled than another upgrade of a product numerous competitors offer as well and which cannot be produced more cheaply. Even though the products of

Huawei were not incredible in the beginning the sublime treatment of the consumers convinced them to consume Huawei's products and made them brand-loyal as an actual person was always available to fix a faulty product. Once the salespersons and other employees have internalized this concept it turns into a perpetuum mobile: Good service attracts costumers who stay for the good service. Huawei has not forgotten where the money that keeps a company running comes from initially and sticks to this concept. (Tao and Chunbo 2015, xxxi, 2-5, 15-17; Luo et al. 2011, 69; Zhang 2013, 39-41.)

However Huawei's focus on the consumer does not mean that the customer only has to feel good about the products bought or that the immediate help when encountering problems has to be on point but what is much more important is the dedication of the employees to the constant connectivity and accessibility to communication networks 24 hours a day seven days a week and in every possible corner of the world and the reliability that the networks are installed in time and maintained around the clock. This system and company value can only be successful when all the employees stand behind it and dedicate their jobs and in some cases their lifetime to it. This requires an excellent human resources department. (Tao and Chunbo 2015, 32-35, 48; Huawei 2017 A, 10-11.)

All these values are in fact part of an elaborate strategy Ren Zhengfei designed for Huawei in the expectation for it to succeed easier, however to be able to do that proper self-knowledge is in order. One has to be aware of one's abilities and expectations as well as dreams and opportunities. To undertake such an endeavor one has to pragmatically use ones resources and decide how far one is ready to go to make one's goals come true. This also implies a vague knowledge or wisdom of when to hit and when to stay back and how fast one should change and adapt. In general once a firm is established in the market a slow-paced development is wiser to focus on long-term goals and not get distracted by short-lived opportunities. For now Huawei has taken the decision to not get enlisted on the stock market and not get involved in politics as well as to reach for the stars but not trying to outshine all the other stars there are on the market as such an undertaking is relentless and cannot be won by anybody. Ren understands these market conditions and the role of Huawei as a strategist in the telecom field whose foundations were laid by other people whose work has to be improved as it is hard nowadays to actually make remarkable technological breakthroughs anymore that are able to change the entire system used. Every strategy also does not automatically protect a company from hard times that may rise ahead and the paths it feels forced to take to get back on track again. In 2002 a deal was considered with Motorola but stopped due to personnel changes in Motorola's upper echelon which allowed Huawei to develop the way it did whereas Motorola has disappeared from the club of telecom giants. The failed deal helped Huawei to establish their Huawei Charter which laid way to its successes nowadays. Huawei is an example for a company that stayed in one field only and reached grand successes with it. Restraint and a future goal and long-term plan can pay off, although luck surely also played its part. A gradual change from standing alone and tall to building cooperations with other firms in the market for growing profits for every company involved. Huawei also used the perfect timing to expand its network around the entire world, almost always when the concerned regions were willing to accept the products and services the company had to offer. With great knowledge of crisis and the consumer wishes Huawei even managed to expand in times of the financial crisis after 2008 as it was fully aware of the fact that a telecom business would not be hit as hard as other economic fields, and particularly Huawei was well off due to its absence from the stock market. (Tao and Chunbo 2015, 193-194, 197-201, 204-211.)

Another factor to keep Huawei on track and allows it to keep the upper hand in comparison to numerous other firms is the ability to focus on certain goals and not be distracted too easily by small opportunities that might seem great in a spur of the moment but turn out to be short-lived trends in retrospect. A sophisticated system of checks and balances in the management of the company sees to it that decisions cannot be made hastened and not deliberately to not waste company resources.

The upper management meets before big changes are made and everyone is able to voice their opinions and ideas. Also the opinions of many stakeholders are not taken lightly. A system of CEO rotation is in place which means the seat of CEO is split between three different persons to further keep the company stable and in balance. In every department there are committees that see to it that major decisions are thought through properly. The ideas and plans of these committees do not have to be realistic or completely planned out but simply exist to stimulate each other and breed new exciting ideas. The company is very future oriented and plans ahead apparently on a bigger scale than other comparable companies. However there is enough pragmatism involved to consider the constantly changing market landscape. However new trends must be considered particularly if the majority of costumers takes a liking to them but not if implementing these changes means uncontrollable loss of resources and financial means. Huawei was created from nearly nothing and has not forgotten its less prosperous beginnings. (Tao and Chunbo 2015, xxxii-xxxiii, 18-19, 80, 103, 118, 211-212; Luo et al. 2011, 69; Huawei 2017 B, homepage; Huawei 2017 A, 22-23.)

Criticism inside the firm occasionally is voiced when the focus on the consumer grows too large and potentially mortifies other market opportunities however a balance is aspired between these two important forces. Balance in general is a quality aspired by Huawei as they realized that the aspiration of perfection can never be reached and might not even be as worth pursuing as one could think. It seems values that are guaranteeing a stable ground and the will to always go on are more beneficial than the senseless prosecution of perfection. In its fledgling stage Huawei had to generate immense power and energy to develop into the company it is now however once having reached this point other strategies are required to improve the company further except uncontrolled growth and other values have to manifest to keep it going. This balance is an act that some firms never manage and that devours them in the end, however up until now Huawei's management tactics and its company values do an excellent job of exercising this balance perfectly. However to get to this point reforms were necessary that at first competently threw the balance off, which might be unavoidable at times and it is also the reason every company goes down to make place for another more successful and innovative one but this moment is certainly not there for Huawei yet. (Tao and Chunbo 2015, 17, 219-224.)

Zhang states that Huawei is primarily successful due to their intense marketing efforts although the quality of the products might have been lacking in some departments in the beginning of the company however a devotion to the desires of the costumer are convincing more and more consumers to use Huawei products and with growing firm profits more money can be put into the research and development sector to steadily improve the overall quality and design of the offered and future products. This process leans heavily on the free market and market balance. Another marketing strategy of Huawei is to invite prestigious clients to introductions of the company headquarters as well as presentations of the newest designs and products on company expenses. This might be closely connected to the Chinese practice of *guanxi*, of developing strong personal business relations with clients and consumers. Public exhibitions of technological products are also used by Huawei to present and market their products. The marketing department of the company is also the one which is most intensively financed and its employees tend to earn more than the ones in other departments. (Zhang 2013, 1-6, 40.)

To ensure productivity growth as well as competent production and logistics it is seen to it that all parts of the product developing are up to international standards and are under constant maintenance according to highest security standards to ensure the safety of the production workers and the maintenance teams. In the year 2016 no grave incidents happened which demonstrates the success of the safety measures used. If new suppliers are included in the production chain they are checked to see if their safety philosophy matches with the one of Huawei. The suppliers are being rewarded according to how well the supplying companies follow Huawei's directions, but Huawei also offers help and advice to struggling suppliers. All the safety measures are furthermore also applied to

guarantee the safety of the sold products. Also the safety of office workers is aspired by numerous guidelines. For subsidiaries and outside contractors similar measures come to pass, particularly according to the situations of the regions. Another issue becoming more and more important is the factor of cyber security desired by customers and Huawei as well. The firm even stated that no business interests could ever be more important than securing the data and information of its customers. (Zhang 2013, 4; Huawei 2017 B, homepage; Huawei 2017, 44-47, 113-119; Huawei 2017 A, 38-40, 47-49, 54-56, 62-63.)

Another factor favored particularly by Western citizens and an issue that becomes more and more popular is the consideration of the environment and a sustainable and economic manufacturing as well as supply chain and logistics management which is heavily promoted by Huawei. This concerns for example seldom raw materials which might be harvested under dubious conditions as well as strict conditions of admission for suppliers and critical checks of these terms. Also Huawei sees to it that its CO₂ emissions are lowered as well as its use of electricity through the use of alternative and renewable energy, particularly in the energy-heavy research and development facilities. It is seen to it that as much materials as possible are recycled or reused and green products are produced beforehand and wrapped and sold in green materials. The way of producing more environmentally friendly was also declared in written form at the World Economic Forum. (Huawei 2017 B, homepage; Huawei 2017 A, 18, 42-45, 50-51, 57-60.)

Interestingly enough Huawei is officially not very keen on innovation and innovating, particularly not its internal processes and corporate management. It does not consider innovative spirit to be radically important for higher competitiveness with other firms as the results of innovation are hard to calculate in general and fiscally and as we already know innovation implicates that old ideas or machinery must be left behind or replaced which is always costly and implies the disappearance of an older era. Also numerous firms were already driven to disaster by pursuing technological innovation too heavily. Although the whole world considers Huawei to be very innovative, Huawei prefers to stay conservative as this incorporates balance, stability and the known everyone is used to. However Huawei is interested in the technologies of the future such as artificial intelligence and cloud synergy, but mostly to improve the experiences of its customers. Innovation is a necessary means to keep up with the heavy competition in the market which is also the reason why Huawei has a huge budget for research and development but if the holy trinity of customer service, dedication and company values start to suffer growing innovation quickly loses its worth for Ren Zhengfei. (Tao and Chunbo 2015, 169, 235-237; Huawei 2017, 14-15; Zhang 2013, 43.)

3.6.2. Entrepreneurial aspect

The founder of Huawei Ren Zhengfei can certainly be called an entrepreneur according to Schumpeter's definition. He founded the company in times of changes and under difficult circumstances as already during the time numerous other entrepreneurial persons tried to achieve what only few managed in the end, to actually build up a global and especially successful business. He fought against the hegemony of foreign enterprises in China's telecommunications industry and wanted to replace them by new and affordable materials. To bring his first entirely self-fabricated product on the market he risked his company and all his resources in the hope to succeed. Ren, although the state puts obstacles in his way as a private enterprise owner, feels pride to spread a Chinese brand in the world and improve the opinion the world has on Chinese products and Chinese values in general. Ren is described as a lone wolf who has close to no friends and occupations except Huawei which he dedicated his life to, constantly seeing to it that the company improves, however he is also of the opinion that the company has a life of its own and develops itself. Despite his seemingly lone personality Ren is a great manager of his company holding connections to his departments and keeping himself updated on every important issue even though the life of a successful business man takes its toll. Still Ren is a very humble man forcing the entire upper

management of Huawei to be so as well, even family members who also work for the company. Furthermore he is of the opinion that as long as Huawei's biggest goal is the satisfaction of the customer even the loss of himself as a leader or an entrepreneurial spirit in general should not matter. He even revises the company management tactics to ensure the survival of Huawei without himself as a leading spirit in the future by reducing his role as leader to a minimum and not enforcing his decisions on the employees but by motivating them to come to a democratic solution through compromise. Maybe also the shifting system of three CEOs, namely Guo Ping, Hu Houkun and Xu Zhijun, who take turns is a measure to ensure stability even if it does not come from Ren himself. (Tao and Chunbo 2015, xxi-xxv, xxxv, 2-3, 16, 27-28, 50, 96-97, 114, 160, 189, 197; Huawei 2017, 104; Zhang 2013, 103-104.)

Ren himself only owns 1.42 percent of his company in stakes however he has stayed the CEO ever since the beginning. He never gave up control and until this day stays the truest achiever of his brand and might be compared to Steve Jobs in terms of dedication and innovative spirit which produces new ideas and development processes by the minute. However he is also seen as a demanding boss who sometimes appears abusive in public and always has the need to be the center of attention. If needed he gets help from the outside to gain new perspectives and involves a fresh pair of eyes and is deeply involved in every process necessary to get new and successful products on the market. He has a profound understanding of the importance of good management and is not afraid to involve himself in it. He appears to be one of the most driving forces of the company as he introduces innovative ideas himself and motivates his employees to do so as well. He puts confidence in the firms' employees to give their best as this is the most primary thing every single person has to offer and in combination great things can be achieved by that spirit. However Ren never fails to keep in contact with reality and always questions his set of mind and ideas and demands the same of his personnel. He never passes up an opportunity to learn new things and talk to people of different walks of life. For this reason he becomes easily accessible and is a good example for every worker, salesperson or manager in his firm and also outside. He himself has many successful business people and politicians as role models but also gets inspired by ancient Chinese stories and heroes as well as the works of Mao Zedong and the spirit of Deng Xiaoping. Moreover Ren understands that it is best for a firm and its employees that change does not come too fast and unexpected but that internal changes are better implemented gradually over longer periods of time which furthermore saves costs and reinsures some points of stability employees can rely on. (Tao and Chunbo 2015, xxx-xxxii, 61-62, 71, 94-95, 111, 114, 168-169.)

In the globalized world nowadays Ren sees that not only consumer wishes are important but also the bigger picture of other companies in the field and collaborations with other enterprises, however he refrains from entering alliances with other companies to not intervene in the company politics of open doors and the ideal of a collaborative market where all companies essentially work together to provide the best customer experiences. To further support the free market the company decided to never join in on any anti-monopoly advances. He is furthermore concerned with the economic decisions the state takes and offers recommendations himself such as tax reductions to stay competitive and attractive for foreign companies. In general there is quite the connection between business and politics in China. A few Chinese entrepreneurs also foster political ambitions or are at least up to some point involved in local politics. Ren only held a small political position as delegate in the National Congress of the Chinese Communist Party before he founded Huawei but later on rejected all further offers to enter politics as he wants to focus exclusively on the company. Even managers at Huawei are not advised to aspire to reach political positions if they also want to stay in the company and political involvement is a taboo for any employees and a reason to be let go although this is in fact against the Chinese constitution. Ren is furthermore concerned with the apparent decline of Europe as these once hugely successful and wealthy nations became comfortable and lazy. The United States of America are considered to have ruining politics but its companies are hugely successful and they see to it that the nation births the most cutting-edge

technology to gain advantages on the market. (Tao and Chunbo 2015, 20, 26-27, 37-41, 43, 70, 191-192.)

However Ren Zhengfei knows the concept of the free market and he feels the immediate and constant threat of other companies which could overtake and replace Huawei in case the market situation changes or minor mistakes are made. He is aware that up until now Huawei made no mistakes however the beginnings and the foundation of the firm were hard and since its constant rising Huawei has not yet hit any hardships but they might lurk just around the corner which he fears particularly during recession and depressive periods. Although the economic climate might be hard, Ren is not fixated on making profits and growing Huawei. He is of the opinion that sometimes survival is enough and small losses can be made up again with time. However due to the market processes he hopes a recession will not take over the whole world at once but will always leave loopholes Huawei can squeeze through to safety. However with the speed of improvement and development in the IT branch Ren fears that the glass is nearly full in the field of telecommunications and soon no further progress can be made to improve the situation of customers and at this point Huawei better be already on top to easier defend its position. Another helpful feature is Ren Zhengfei's paranoia and feeling for upcoming trouble and crisis which allows the company to prepare properly and prepare measures for darker moments. It also appears to be a mechanism to keep the employees idle and their focus on improving the company to withstand future troubles as for a private economy on the global market there is always a risk and a crisis in sight. (Tao and Chunbo 2015, xxxiii-xxxiv, 27, 31, 42, 48, 224-226; Luo et al. 2011, 70; Huawei 2017, 48.)

To avoid incalculable risks Ren does shy away from venture investments and such as the successes of companies which agree to such deals might be short-lived and can end as abruptly as they started. Moreover he is afraid that the wealth that would come to Huawei would only concern a few members of the higher management which would as a consequence diminish the results these people contribute to the company and destroy it from the inside out. They could even turn into competitors in case they use their gained knowledge to develop their own firm. What is more Ren wants to stay in place and realize his goals he made for the firm, however if other parties entered the company via shares his sole reign could end fast. What is more Huawei refuses to allow a small number of people to enrich themselves through the company as they already did with so many others. As of now Huawei could not sell shares in China if it wanted to as a company must per law not have over 200 shareholders. In comparison to Huawei many Chinese firms use venture capital that became particularly popular since 2006. Clear advantages of venture capital are of course the quick inflow of cash a company could use to improve its research and development facilities and as such boost its innovation and patent numbers. (Tao and Chunbo 2015, 12-13, 47-49, 132; Maxwell 2009, 41.)

Huawei stands not only for great customer service but also for constant improvement through hard work. All the energy and innovative spirit the company can generate has to be bundled and focused on the basis of Huawei's success and main goal: To improve for the consumers. Dedication to this aim is one of the primary characteristics a Huawei employee should possess and Ren compares this spirit to the one of the Chinese Communist Party for their political goals. He demands at least understanding for the sacrifices he himself and many more members of the company have made during its existence to keep it running and growing. Huawei employees should see themselves as wolves that live and work together in a wolf pack which creates the perfect productive conditions to survive in the corporate world nowadays and always find new ways to persist. Ren sees to it that the members and employees of his company feel valued and successful with what they achieved up until now in their lives, even simply having gained the qualifications to work for Huawei is already a great step for him. Ren also introduced the company concept that the sales persons and customer service workers are remunerated maybe better than in other comparable firms as he is of the opinion

that these peoples' work is particularly valuable and the contacts with the clients are worth more than can be put into words as the customers are the driving force of Huawei. (Tao and Chunbo 2015, 32-37, 50, 152, 157; Zhang 2013, 1-4, 6.)

Huawei with all its values and successes it can show off with nowadays only came to this fortune through constant restructuring and reforms in the company, initiated by the leaders and executed by all the employees collectively where no one refused the progress being won from it. As we all know from the Huawei story up until now great things can be achieved with employees who all work together for the greater company good. Through hard reforms Huawei, in times gradually in times radically reduced the power of the upper echelon and the management and declared Huawei as lead by the employees all in the name of infusing the firm with balanced power and prolonging its life without being dependent on a leadership. This included also the reduction of the practical power of Ren Zhengfei however figurative power is still yielded by him. Other aspects of reform included the adaptation of Western corporate management techniques which were supposed to help Huawei to catch up to the Western concerns as well as provide an advantage in comparison to other Asian companies which was triumphant in the long run however also very expensive fiscally speaking but of course these investments paid off with much more value by today's estimate. Those fusion techniques were later furthermore reformed and created the company values we know today. Reforms were also used to solve grave problems that would have brought down the company as only small changes would not have been able to save it however not correcting faulty basics can never establish a groundwork for a well-running firm as more and more setbacks over time would need constant reform that no firm could realistically get used to and properly implement. Much can go wrong in trying to reform a company, particularly one of a certain size, however as long as one acts pragmatically and carefully and is not too overly enthusiastic in one's expectations and does not implement methods that are not proven to work or at least highly likely to work and does not expect uneducated or untrained personnel to carry the reform not much can go wrong. When different departments are reformed one after the other better results can be expected than if everything is turned upside down at once. In China there exists even a difference between good and bad reforms, which are usually destroying good elements as well as bad ones which is of course less desirable. (Tao and Chunbo 2015, 160-165, 167-169, 182, 184-185.)

Tao and Chunbo go as far as to compare a large influential company to a religion with the huge difference that religions actually make it through centuries whereas companies wither and die frequently. They attribute this to the values and care a religion offers to its followers as well as its appeals to the most basic desires of a human being. In the case of Huawei these would be being heard and recognized as an essential force as well as being the center of their universe and philosophy. (Tao and Chunbo 2015, 21-24.)

Private companies in China became more powerful over the past few years and had very limited rights before however since the privatization of more public firms happened and the liberalization and competition of the market advanced the private sector started to hold influences in China's economy and became closer to being equal to the public sector. Still some sectors cannot be penetrated by private companies as they are fully in the hand of the state and as such receive multiple benefits and subsidies which conceal their potential losses and inefficiency. Wages and loans are also by trend monopolized by state firms. However Chinese firms are more sluggish and are not as competitive as private firms such as Huawei as they are bound to decisions of the state. (Coase and Wang 2013, 151-152, 181-182; Tao and Chunbo 2015, 180.)

Huawei, like many other firms nowadays assures compliance to business ethics and the standards of the industry as well as governmental regulations. These include the agreement to battle bribery and to meet intellectual property rights. Also the rights and wellbeing of employees are seen to, to create a productive work environment which also includes the opinions of the employees themselves. One

of the main concerns is the well-being and safety of the personnel working for the company. Human rights are being protected, for example through close collaborations with NGOs. Huawei also does acknowledge the problems less fortunate persons have and for example produced easily usable systems for blind or visually impaired persons to allow them full access to telecom services as well. Huawei also offers medical services to African countries in desperate need of such aid. As the company aspires the connectivity and internet access to all of mankind it furthermore established schools as well as further education centers all around the world to teach young and old people the usefulness of the newest ICT possibilities. Huawei also acknowledges its corporate responsibility of having to support its local communities with such projects, for example the company also is involved in refugee camps all over the globe and lends support in the case of natural disasters. The company also holds general development goals such as the eradication of hunger and access to clean water for everyone. (Huawei 2017 A, 28-30, 36-37, 46, 67, 69, 71, 78-87; Zhang 2013, 77, 80.)

To demonstrate economic profits and success Huawei's offices and marketing facilities are usually housed in prestigious buildings in China as well as abroad. In case Huawei builds their own facilities these are also designed to perfection and are always easy on the eye as well as mostly located at the periphery of larger towns and embedded naturally in their surroundings. (Zhang 2013, 5, 99-100; Tao and Chunbo 2015, 218.)

Huawei moreover has an own university in which students can learn the Huawei philosophies and management tactics as well as the corporate values which keep the company flourishing and growing at a steady pace. Already more than 100000 graduates have passed various courses at Huawei University. (Tao and Chunbo 2015, 119.)

3.6.3. Competitors and Competition

In the case of competitors the Chinese state plays a huge role in China as it tends to control more sensitive areas of an economy. The state also owns a lot of companies on the market which it also privileges. These state-owned companies that are favored and held alive even though the market mechanisms would kill them might turn out as problems. However in the case of the telecommunications industry the Chinese state supports its Chinese telecom companies, whether they are publicly or privately owned. The Chinese government even issues telecom contracts for its companies abroad, mostly in developing regions which also gain loans for using Chinese based telecom firms. Huawei might even be mentioned in a praising manner by the government, particularly outside of China as its reputation is good and as a Chinese firm also sheds a positive light on China itself. (Coase and Wang 2013, 136-139, 169; Foster and Reinsch 2010, 302; Luo et al. 2011, 69.)

Regional competition is an inevitable factor in China as sectors tend to develop in more than one location at once. This is not connected to a positive impact but the opposite; however it can hardly be avoided in a huge territory such as China, same as the competition between regions for profitable firms. Coase and Wang call this the side effects of a still developing market economy; however it positively affects the skills of workers in the over-invested fields and also counteracts the heavy reliance on agrarian economy in the inner country which helps keep up the advantages of producing quickly and cheaply. (Coase and Wang 2013, 138-145.)

Zhang claims that the marketing sector is generally speaking the most influential department concerning economic successes and alluring more consumers than competitor companies offering the same products. Teamwork and creative spirit are emphasized as the way to success in marketing. The over-regional marketing departments are focused on connecting the products with the consumers according to the consumers' specific desires in the affected region. (Zhang 2013, 6-8.)

As a private company the state does not support Huawei in any way but tended to put obstacles in its way from the beginning however many foreign forces doubt that and are of the opinion that Huawei must have some help from the Chinese state in achieving its grandness which Huawei strictly rejects. (Tao and Chunbo 2015, xxxiv, 59.) Huang claims that Huawei certainly has connections to the military and as such receives subsidies from the state which might seem most plausible as Ren Zhengfei used to work there however this is the only reason these rumors are circulating as well as potentially the hierarchy and management reforms in the company that might have a military touch, which is however the case with nearly all big companies that need a firm hand being lead to not fall into chaos. (Huang 2008, 11; Tao and Chunbo 2015, 58, 78-79; Defraigne 2013, 38.)

All in all considered Huawei and Ren propagate that only through hard work and self-reliance great things can be achieved as no one else can be trusted to do work and complete tasks and achieve goals for another one. If you want to reach the top you have to endure pain and setbacks but have to work through these episodes and never rely on mystical help – In the end the ones who understand this concept are the only ones able to reach the top. However once at the top there are still enough enemies one has to battle. American companies do not like to see Huawei as a foreign company enter and take customers and profits otherwise incorporated by American firms which leads to smear campaign from local firms against Huawei, mostly under the veil of defending national security. Potential business deals Huawei wanted to undertake in the US with American companies where halted or vetoed by the state. Dubious international news coverage of Chinese firms and Huawei in particular makes Ren Zhengfei feel very mistrustful of interviews and articles about himself and the company as many business people were already dragged through the mud by the media to quickly fade away and completely disappear in the aftermath. He is of the opinion that one of the reasons Huawei made it so far is the fact that it always kept its distance from the media which is mostly doable as it has no commitment to externalize as it is a private firm but certain news coverage is possible. However employees may do so if they desire to speak to the media and may offer their opinions freely but Ren Zhengfei is not very present in the media and prefers the situation to stay this way; in fact he even works for his absence in the media by passing up public nominations. (Tao and Chunbo 2015, 35-36, 59-60, 73-74, 76, 80-81, 189-190, 192, 208-209, Luo et al. 2011, 70.)

Huawei themselves claim to not pay too much attention to their competition and more to the consumers. However they are aware that there are giants out there who threaten to steal their market and their consumers which motivates them to sustain their wins and be comparable to these giants but not turn into them themselves completely for their unique way of dealing with the market and the firm could disappear in the process which would dissolve their sole advantage. Moreover are they keen on developing and working on a more amicable and supportive atmosphere in the market where other firms are not only competitors but also supporters also concerning the creation of a more environmentally friendly and sustainable way of producing. Collaboration is written in capital letters for Huawei as they are sure that this is the way everyone profits the most and most other companies in the telecommunication field see this the same way. Numerous joint ventures were initiated by Huawei, mostly with other huge companies in the telecom field such as 3COM which was meant to open the way for Huawei to a larger output market; however this deal was intercepted by the US government. A deal with Siemens went better, the collaboration for developing 3G was successful and helped Huawei as well as Siemens in improving their businesses. In case companies actually do not like to collaborate with Huawei and also do not see it as the legitimate prosperous firm it is Huawei does not shy away timidly in a corner but stands tall and rubs its hitherto achievements in their faces. If companies want to join Huawei's innovative efforts they can do so through open source collaborations. (Tao and Chunbo 2015, 18, 37, 86, 104, 128; Luo et al. 2011, 70-71; Fan 2011, 838; Huawei 2017 B, homepage; Huawei 2017, 48-49.)

Apparently globally the biggest competitor of Huawei is Ericsson which is the largest telecom

company in the industry. On Chinese soil the biggest Chinese and comparable competitor is ZTE which was founded in 1985 as a state-owned company in Shenzhen like Huawei. However nowadays ZTE is still state-owned but privately managed which provides it with the best aspects possible in China nowadays. ZTE was also the first Chinese firm in the field of telecommunication to appear on the stock market to improve its financial situation. Its developing story is similar to Huawei's and nowadays it is quite successful in Europe but also in economies Huawei was not able to penetrate such as Russia. (Tao and Chunbo 2015, xxvi-xxviii, 8, 73; Fan 2011, 835-837.)

3.6.4. Imitator tactics

In general the bad rumor of only imitating products and designs as well as brand names always follows Chinese products and Chinese companies. These opinions are not entirely wrong; numerous Chinese companies are not very innovative and still have some catching-up to do to. Some have the same level as other firms in the same field however small Chinese firms also simply cannot afford to spend much on research and development. (Tao and Chunbo 2015, 236.)

Huawei is also quick to adapt its firm structure to changing economic policies of the communist party and with more options or a freer market section to see its opportunity of market entry in what used to be exclusively state-owned sectors as used to be the case with the countries telecommunications industry. (Zhang 2013, 8; Huang 2008, 11.)

In the earlier years of Huawei after the development of their first own products Huawei felt the urgent need to grow and expand as quickly as possible to be able to compete with other companies on the market and at the top of the telecommunications field. To achieve this goal Huawei imitated the management and growth processes of American companies as these at the time were the most successful ones on the market and had already years of management experiences to look back to and learn from. Ren did not mind that China was not popular in America at the time but insisted on being practical to have the tools to overtake any company on the free market with their own means. Ren attributes America's success to the diversity of the country which allows it to use innovation and creativity from a large pool of persons as well as the rule of law and the fact that the country was more open and further developed in every aspect than China. Another interesting aspect used by the USA is the same tactic used during the Cultural Revolution: To guarantee a feeling of togetherness and further development the constant feeling of threat and enemies outside of the country is created and upheld by the American state. (Tao and Chunbo 2015, 55-56.)

In the late 1990s Huawei strongly imitated the management concepts and foundations of a successful corporation of the American company IBM who lend a helping hand to Huawei and allowed the company to take its faith into its own hands, however it was mostly the successful adaption of these suggested processes that can be pointed out for Huawei's growth and successful continuity. (Tao and Chunbo 2015, 57.)

Ren is aware that in the field of telecommunication technological innovations are difficult to achieve in this time and place and the only hope is to improve existing inventions and offer the human touch with fitting customer services. (Tao and Chunbo 2015, 197-198.)

Still Ren Zhengfei emphasizes the positive outcomes of collaborations with other firms, Chinese or foreign, as everyone can profit from such teamwork and companies trying to make it on their own will inevitably fail at some point on the way. (Tao and Chunbo 2015, 65.)

3.6.5. Company intern and external research

Huawei invests more than 10 percent of its sales revenue in its research and development facilities which are spread all over the planet every year. Over 75000 people constantly work in this sector for the company with a support of about 10 billion Chinese Yuan per year. Interestingly enough Huawei manages to employ all its personnel in research for at times about one fifth of what a

comparable researcher would earn in a Western country as the huge number of university graduates offers a cheap pool of highly educated workers. However apparently all these personnel and fiscal efforts have not yet managed to birth a groundbreaking innovation but only improved smaller details in already existing technological gadgets. The patents for existing important gadgets to begin with were obtained through official paths and licenses which cost Huawei in 2010 up to 222 million US-Dollars. However these numbers also helped Huawei establish business opportunities with a value of about 20 billion US-Dollars. Nevertheless saving all the money for licenses and royalties will take Huawei another years of great effort. (Tao and Chunbo 2015, 66-67, 236; Foster and Reinsch 2010, 301; Luo et al. 2011, 68, 70; Huawei 2017 B, homepage; Huawei 2017 A, 5.)

Considering the research and development facilities Huawei holds outside of China one has to understand that these are mostly used to provide facilitated entry into the local markets as well as improve the contact with the local customers to be able to aid them more efficiently, which pays off even though the costs for obtaining facilities in higher developed countries might be more pricey. The firms are able to obtain personnel from the host country which can be valuable in terms of knowledge that can be used for further market entry strategies or other business opportunities. However on the other hand Huawei also outsources easier research and development tasks to save costs. (Fan 2011, 833-834, 838; Zhang 2013, 106.)

Huawei states that a solely company intern research is not as valuable as cooperating with other sources of knowledge and research and development outside of one's own company. These cooperations with other firms and scientific clusters are what keeps a company alive nowadays and even more research partners have to be found to mutually improve all the companies' part of research clusters which acquired of course a certain grade of openness. This is for example carried out by collective research facilities with other companies such as Intel and Motorola all over the globe as well as joint ventures with Siemens and 3Com. (Tao and Chunbo 2015, 54, 62-63, 65, 69; Luo et al. 2011, 68; Zhang 2013, 36-37.)

Apparently Huawei has some alternative research facilities which are mostly constructed for the extensive testing of newly designed or created products by consumers with the hopes of finding new innovative impacts or findings highly desired by consumers. (Zhang 2013, 3-4, Tao and Chunbo 2015, 69.)

The research and development sector and the marketing sector have to be in close collaboration as the products are designed and improved to please the consumers. (Zhang 2013, 3.)

3.7. Example

As a positive and highly economically successful example of a product from Huawei I want to mention the Softswitch, Huawei's most popular service, as well as a not yet released further developed form of Next Generation Networks called Internet Protocol Multi-media Subsystem, short IMS, which allows it to use a lot of platforms like television as well as landline and cell phones, through just one single solution which is a very advanced service not many companies research in and will be able to offer. (Foster and Reinsch 2010, 297-300.)

Huawei got the contract with the telecommunication service China Mobile from the Chinese Ministry of Information Industries as a governmental support for Chinese telecom companies and to increase the growth of the Chinese telecom industry and indeed it helped Huawei a lot to obtain such a large client. The services China Mobile offers refer to the countless Voice over Internet Protocols which were established around Huawei's model of the Softswitch which allows it to connect users of Voice over Internet Protocols meaning for example telecom services running only

over the internet to services running only over landlines, which of course means that these services have to be transformed in between the calls and vice versa to be compatible. These Softswitches are computer programs which run without hardware and are practical as well as cheaper than any competitive products and can be easily personalized for the needs of each telecom provider. These personalizations are a clever part of Huawei's business philosophy as they make the product even more popular by the customers and are not expensive for Huawei to offer due to the cheap work force offering itself on the Chinese market the company can keep these services very low in comparison to all the other competing telecom firms. Huawei's switches are the most popular and most bought on the market with the largest number of users which means that numerous telecom providers use Huawei's Application Programming Interfaces (APIs) which gives them a huge advantage on the market in comparison to all the other vendors of Softswitches. Moreover Huawei allows customers to enter their APIs and connected information as to enable them to customize their Softswitches even further on their own with their individual programming at the risk that these companies turn into competitors for Huawei themselves. (Foster and Reinsch 2010, 297-302.)

However Huawei still wants to take a step up to a new level of innovation in telecommunications which means in the case of the Softswitch this data traffic is being transferred to a more advanced switching technology namely the IMS. This technological novelty has the goal to fluently connect all possible platforms available and assure high quality multimedia experience. However the research to this topic is difficult as it is tricky to develop and establish means which smoothly communicate to all platforms available. But once the research and development for this means is finished it can be guaranteed that whatever technological development the future brings, particularly as to what form of communication the most popular will be, all platforms are covered by the IMS which means by the purchasing and switching to this system a telecom provider can only win and their clients are reassured that whatever platform they use these telecom providers cover their unlimited connectivity. (Foster and Reinsch 2010, 297-300.) Today the popularity of Softswitches is slowly replaced by the new technologies in this field such as the IMS solutions. These more modern technologies will grow even further in the next few years. (Unknown author 2014, online article.)

To forward the Next Generation Networks technology numerous research groups with Huawei's involvement exist which all research following the developments Huawei already took in this direction, which indicates that up until now Huawei uses an open innovation approach to advance the technology further, however at some point they might decide to keep their engineering secrets and close the open innovation research. IMS is particularly desired for telecommunication companies as these services once added to the sales choices should become quite popular, however the largest competitor to such services are companies like Skype and if these advance even further and not every telecom firm can fiscally afford to change to IMS this high risk innovation research will crash and burn. (Foster and Reinsch 2010, 298-299, 301.)

3.8. Problems

Everything mentioned up until now concerning the Huawei company seems very positive, innovative and market-leading however not everything that glitters is all gold and the company itself as well as the corporate system in China has flaws and deeper problems that cannot be left out completely as they have a huge impact on Huawei and its potential future developments.

3.8.1. Working spirit and conditions in China

A synonym of working very hard and excessive the Asian way is the term of the mattress culture, which was incorporated by Huawei, particularly the firm's beginnings when employees were able to stay in the company over night on provided mattresses and bedding. This enabled them to nap for a

few hours and immediately continue working as soon as having rested a little. Asian employees considered this service as practical and pragmatic as well as depicting the hard-working spirit of Asian workers. However after a number of suicides which appeared to be work-related the mattress culture turned into something sour and too obsessive. The former positive connotation was reversed and demonized, apparently by some of Huawei's employees. Still many workers in Huawei have sleeping equipment at their work stations so be able to snooze a little in between long working hours. Be that as it may the conditions and the pressure to perform outstandingly seem to have risen these past few years as the Asian work-related suicides were no issue some years back but are now already nagging on pupils and university students. (Tao and Chunbo 2015, 33-35, 41, 78-79; Luo et al. 2011, 69; Fan 2011, 835.)

However Tao and Chunbo show that the mattress culture is not only limited to Asia but also rules the employees of some American highly competitive IT companies whose young programmers also hardly have a good night's sleep due to the need to work overtime. Actual sleeping spots were set up in some companies and turned out to be intensely popular by the workers but were not fancied by the upper echelon. (Tao and Chunbo 2015, 41.)

Still not only active suicides have the potential of killing Chinese office workers but also the mere fact of working too excessively and putting too much stress on oneself can cause diseases that are deadly such as heart attack or strokes which apparently come up to about 600.000 victims per year in China. The government does nothing to prevent such incidents from happening but gives these employees the status of martyrs who died for the country and the speedy Chinese economic development as well as the old communist party ideals, even though it is known that the majority of workers are taking on more hours than legally allowed. Also these deaths appear to not be questioned thoroughly such as for example in Japan but are considered collateral damage on the road to economic success. (Oster 2014, online article.)

Reasons for working more than necessary or physically and emotionally healthy can be found in the traditional culture of China where people still cling to the ideals of Confucianism as well as a personal nature of dedicating oneself too heavily to ones work and not knowing a healthy work-life balance as well as the missing desire and missing role model of achieving one. The topic of dying after working too much is still stigmatized and tabooed in China. However Huawei established health centers for its employees to prevent such tragic faiths. (Oster 2014, online article; Huawei 2017, 122.)

The tragic faith of dying from working too hard for a long period of time does not only affect white-collar workers but also workers conducting manual labor at the factories of Huawei. Huawei itself claims that workers are protected by strict regulations and their labor unions which were specifically installed to support workers' rights however other voices claim that these unions are not able to support their workers properly, at least on Chinese soil and that involuntary working overtime is a known issue in Chinese factories. (China Labor Bulletin 2007, 3, 49-50; Huawei 2017 B, homepage.)

Another issue with the workers unions can be seen in facilities abroad. Huawei is not the only company using cheaper labor of other countries to cut production and employees costs and albeit claiming that the workers unions as well as the local laws and regulations are respected, issues tend to pop up from time to time. These are mostly connected to the refusal of Huawei to turn workers into full-time employees for example in Indonesia although they have been working for the firm for longer periods of time as well as a preferential treatment of foreign employees working in the country's facilities and even the alleged claims of keeping workers that are not officially employed by Huawei. Other problems arise as Huawei wants to save more costs and outsources some jobs to even cheaper countries with a cheaper labor force which causes for example the subcontractors of a

South African company to protest on the streets with more or less efficient media coverage. (Huawei 2017 B, homepage; Dempsey 2017, online article; Unknown author 2013, online article; Lukman 2013, online article.)

3.8.2. Education system

A common problem which diminishes the changes of China's pursuit of fabricating better innovations is the education system. The universities which are supposed to bear clever autonomous scientists and scholars are controlled by the state which will not let go of an outdated system which suffocates self-reliance and creativity. In this case the number of graduates on tertiary education institutes does not realistically depict the potential of the university graduates in China. Although there are about 1900 institutes for higher education in China and millions of graduates every year these young people are not ready for a real work experience as they are not fit through their education for leading positions that require more creativity. The engineering graduates appear to be largely under the requirements that international firms demand from their employees. The classes they have are sometimes too focused on Western practices which cannot be applied in the Chinese business reality. However there are already forces which counteract the negative parts of the education system and make way to a brighter future where graduates will be better prepared for their future jobs. It is proposed that China should be inspired by the Japanese education system which might help push its own to new heights. (Coase and Wang 2013, 190-193; Johnson and Chuang 2010, 391-392; Defraigne 2013, 42.)

However even in general education more self-reliance and free thinking should be taught as innovative people who can solve problems themselves in a more creative but nonetheless effective way are preferably taken in by firms that are already working in a more innovative industry. Moreover such workers are also needed to handle more advanced technological inventions as they are most likely easier to train and the instruction will take a shorter amount of time. (Johnson and Chuang 2010, 386-387.)

Actually there are measures undertaken by the Chinese state to improve the quality of the education and quite some money is spent on achieving that but the attempts rest futile yet. An issue is surely that the percentage of GDP spent on improving the education system was reduced over the past few years and only makes up 1,9 per cent as of the year 2005 which is also low in comparison to other developing countries. However it cannot be denied that it is seen to it that the overall population receives education although not every single student can be guaranteed to be supported to reach his or her best. Also the local governments have a lot of power in how the education system is carried though in their respective region. Another issue is the low payment of the teaching personnel in China in ordinary schools on the countryside as well as the fact that the teachers have to work unpaid overtime very frequently and are not supported properly by any teachers unions. Better wages or earnest bonuses would probably lure more young motivated people into becoming teachers and also encourage them in general to perform excellently. (Johnson and Chuang 2010, 396; China Labor Bulletin 2014, 27-29, 32; Defraigne 2013, 42.)

Concerning the students following their studies abroad in Western countries the majority does not plan on returning to China and if so only to work for foreign firms which leaves the Chinese companies without the valuable know-how these employees could contribute to the Chinese economy. (Defraigne 2013, 42.)

Some scholars claim that the Confucian values having ruled in China for centuries are a barrier for the development of the education system as the criticism of elders and teachers are not valued in this system, whereas others are of the opinion that this issue will sort itself out over time. (Maxwell 2009, 54.)

Considering the efficiency of the education system when looking at the patents signed by China the pure numbers seem quite agreeable, for example over 20000 patents between the time frame of five years between 2000 and 2005, however one has to keep in mind that although the quantity is there nothing can be said about the quality without digging any deeper. Moreover China receives less money for its royalties than other countries. (Johnson and Chuang 2010, 396; Defraigne 2013, 42-43.)

3.8.3. Intellectual Property rights

Intellectual property rights like they are common in the Western countries for new inventions and innovations are acknowledged by Huawei as well and the company strives for patents of its own and more development in this sector in China in general, also due to the fact that Huawei holds one of the most numbers of patents in its field. Valuating IP rights more would help with higher appreciation of innovation and more talents and inventive spirits would step forward and help China prosper. However until this becomes reality Huawei has to pay a lot of money for royalties every year and still has to fight numerous law suits concerning IP rights regularly either because other companies claim Huawei is using their technology or the other way around but this appears to be a common sight in the telecommunication business and in the end most former law suits are settled extrajudicially. Huawei has not only recognized the importance of protecting ones property but also seeks to secure specific innovative technologies via numerous patent applications. The goal of this tactic is to hinder competitive companies in developing the same technologies or at least earn from the rights Huawei holds. (Tao and Chunbo 2015, 67-68; Huawei 2017 B, homepage; Huawei 2017 A, 29; Godinho and Ferreira 2013, 1052.)

In general the respect for IP rights rises worldwide and particularly China is on a path of acknowledging the importance of these methods. Not only the filing of patents is a method of securing the rights to one's property but also trademarks under the Madrid System and utility model registrations are on the rise. In 2016 over 38 per cent of all applications worldwide came from China. However considering the relation of applications to the GDP of a country South Korea is actually the largest applicant. In the case of trademark registrations China made up one third of all registrations in this field. 50 per cent of all industrial designs were inquired by China in 2015. The enthusiasm of the Chinese with the IPR system can be traced back to the incredible scientific leaps the country conducted in the past few years. The input of money into the improvement of science and technology has been growing massively and the publications of Chinese scientists rose significantly making up over 12 per cent globally. (World Intellectual Property Organization 2016, 8-9, 11-14, 22, 30; Godinho and Ferreira 2013, 1044, 1048.)

Huawei's research and development facilities manage to invent up to five features a day or even more that could apply for patenting. In total Huawei established over 50000 patents in its home country and in foreign countries. These achievements help Huawei to make deals with other firms through patent exchanges. Through Huawei's acknowledgment of the overall importance of patents in technological development and innovative progress it learned to appreciate the safety connected with intellectual property rights and becomes more firm in demanding that its own patents are being respected by other countries which is still not a common thing for Chinese companies. However on the other hand these rights can also be demanded by foreign firms in the same situation and China's process of catching-up was too slow in comparison to other Asian countries to simply let such IP infringements slip through the cracks. (Tao and Chunbo 2015, 236; Lee 2016, online article; Huawei 2017 B, homepage; Defraigne 2013, 39-40; Zhang 2013, 138-139.)

Steadily growing numbers of patents are usually connected to growing innovation as well. However the registration of trademarks which are generally used to demonstrate the uniqueness of one's own

product in comparison to similar ones is considered not as important but holds valuable information as well. One also has to consider that new innovations can have impacts on the IP rights as well, for example new software. Apparently the sheer patent number can hold information but additional indicators should be considered as well to determine the actual level of innovation a company has to offer. In the case of China one also has to put into consideration that the overall quality of the registered patents is merely average or even lower which can be seen on how often a patent is quoted. (Godinho and Ferreira 2013, 1045-1046; World Intellectual Property Organization 2015, 15-16.)

However in general problems develop in connection with intellectual property rights as innovations might not be made inside a company or by joint ventures but by open innovation networks which have been questioning the entire system of these certain kinds of rights. (Maxwell 2009, 33.) Another factor concerning IP rights are treacherous workers who want to sell company secrets and technologies to other firms or other forms of industrial espionage. Only IP rights hinder such businesses and render them illegal. (Tao and Chunbo 2015, 125.)

3.9. Future outlook

Huawei strongly intends to become even more open and transparent in the future as well as more democratic for its employees and for potential clients all around the globe. Stripping away distrust is closely connected to more openness and this strategy will be necessary to be accepted by more governments and people. More openness with the media is also required for Huawei to appear in a better public light and to become more popular with potential customers around the world. (Tao and Chunbo 2015, 78-79, 208, 222.)

The company has to further its ability to fuse the Asian elements with the Western ones and as such become similar to its Western counterparts but must also keep its Asian soul which contains elements that are not easy to imitate. Constant development and reforms from time to time are still necessary to reach peak performance as is Huawei's strategy of befriending fellow telecom companies and establish collaborations and joined research with them to create a market not solely ruled by competition but by cooperation that everyone profits from. The more joint venture deals Huawei already entered and the more successful they were the better the outlook for establishing more collaboration in the future. However at the same time competitors of Huawei tend to do the same which leads to fiercer competition in the market. (Tao and Chunbo 2015, 142-143, 165, 234; Luo et al. 2011, 68, 71.)

Future impacts out of Huawei's control and influence are for example the actual time the company can live on successfully without its founder Ren Zhengfei. Although he made every preparation and ensures his management that Huawei's successes are not dependent on his person as long as the company values are kept above all else it is written in the stars what will happen without a charismatic leader the whole personnel looks up to and is proud to be working for. If the firm might expand heavily the legitimate question is whether or not the core values can be kept alive through much more employees than already represent them now. (Tao and Chunbo 2015, 156-157, 159-160.)

Other developments Huawei cannot control but which are inevitable are the constant aging of society which will impact the labor market at some time, natural disasters or pollution as well as political unrest and ethnic conflicts. (Tao and Chunbo 2015, 157.)

4. Case study South Korea: Analysis of Samsung Electronics

4.1. Introduction

South Korea is as most of the East Asian countries a place which lacked capital in a fiscal as well as educational and experiential way at the time when Western countries were seen as the axis of innovation and progress, however South Korea's electronics industry helped manage to turn this opinion around 180 degrees. Nowadays everyone knows about the successes the electronics industry of Korea has gone through since its meager beginnings in the 1960s and it was particularly this sector that pushed Korea to become one of the developing countries that developed at a faster pace than any other comparable country before 1997. The IT branch makes up about 25 per cent of the country's economic growth as well as about one third of the country's exports with the high potential of growing even further. (Ali et al. 2011, 2874; Kenney 1998, 1; Ko 2013, 81-83.)

The electronics sector that is so relevant for South Korea nowadays as well as its rapid development is in general an expression of the fast technological changes Western societies go through and it is also a quite thankful and simple enough sector as companies dealing in it have the possibility to alternate their paths relatively easily and speedily. The total factor productivity of the Korean information and communications technology sector is one of the largest even under developed countries, particularly in the field of producing goods and parts. However there exists heavy competition in the field of consumer electronics especially from other developing countries and it is difficult to assess what features new products have to offer so the consumers are still willing to buy, particularly in developed countries where everyone has everything. (Kenney 1998, 1, 3; Kumar 2016, 307-309; Ko 2013, 82-84, 86-87.)

South Korea is a country that has reinforced education and continuous augmentation of knowledge to be able to provide the best opportunities for its population to thrive prosper and develop further. The process of transforming the economy into a knowledge-based one is already moving however still has space for improvements. What is essential is the guarantee from the government to support every citizen who wants to be part of the technological progress so no one is left behind and the population develops technological know-how at an even rate. The universities as carriers of the change have to become more autonomous and by motivating companies in related fields to form networks easier and more productive information flow and exchange is guaranteed. In general Korea has over 90 per cent of its population making use of tertiary education facilities and also birthing nearly 30 per cent of graduates in technical fields and it spends high amounts of money on education. Moreover is the country determined to spend more and more money on research and development to advance its knowledge and opportunities. Another important factor is of course also the keeping-up with competitive countries in similar situations. (Kenney 1998, 1-2; Wong and Cheong 2014, 370-371; Kwon 2010, 41, 106-108, 113.)

The country used to have authoritarian leaderships however nowadays turned into a pluralistic democracy. South Korea's government was and still is heavily involved in the development of the country and tries to support it by institutions and laws which has its advantages as well as disadvantages. Another interesting factor is the hegemony of chaebols, Korean conglomerates which have a lot to say in how the industry develops and which rule the electronics market and have enough power to resist serious monitoring or reforms as well as are able to out-muscle Korea's small and medium sized industries. The Samsung Group turns out to be the largest chaebol in Korea. (Kenney 1998, 1-5; Chang 2012, 1443; Kwon 2010, 4, 229-230, 233.)

Korea's society comes from a quite traditional place with Confucian values ruling society. It may appear that the Korean youth rebels against this concept which is correct, Korean society does not

attempt to be as homogeneous as for example the Japanese one, however still personal relations, seniority principle and unquestioning loyalty are important concepts in society and the work life of the Korean people. Moreover are the work place and the reputation of one's company important to the Koreans and directly related to their own well-being and success and have a position at least as relevant as one's own children. (Glowik 2016, 133-136; Kwon 2010, 30-31.)

China has a huge influence on Korea, the Korean market as well as on Korea's future. Due to its sheer size, cheap work force, powerful influence in Asia as well as worldwide the Chinese economy and market are serious competitors to Korea, which feels pressured to assure its position in the world next to its successful neighbor. Another factor is the increasing research and development potential of China which is furthermore seen by foreign countries which also tap into this resource China has to offer and which threatens to overtake Korea. China is also one of Korea's most important trading partners and Korean companies have already taken advantage of the cheap production facilities and Chinese work force which is not always without cultural conflicts and differences if Chinese workers are managed by Koreans. The large output market offered by China is also eyed by Korean companies as China's growing middle class can afford products from Korean brands, however there are things to consider such as the diversity of China's society as well as the heavy competition on the Chinese market, on the one hand from Chinese companies as well as foreign ones which also want a piece of the cake. The countries are connected through a lot of history and have many things in common such as the importance of keeping one's face in public, a strong national pride as well as the importance of connections to do business. (Hussain 2006, 44, 46-47, 50-51, 54-57, 67-69; Kim 2013, 2-5.)

The sole plan of the country was to come head to head with the developed economies or even overtake them and for Samsung specifically to enter the list of the most economically successful electronics companies of all times. As for Korea Samsung is a leader and a role model. (Kenney 1998, 3; Chang 2012, 1444; Hussain 2006, 87.)

4.2. History of the company

The Samsung Group was founded in 1938 by Lee Byung-Chull with only 30000 Korean Won, not only as Samsung Electronics but as a to-be conglomerate, in which Samsung Electronics is only a part of a larger trading company, also called chaebol in Korean, from which Samsung turns out to be the oldest. The small enterprise that used to be Samsung fell on hard times during the Korean War and had to be restructured through changing business to the manufacturing sector and quickly spreading to other future-oriented sectors as well such as chemicals or shipbuilding. Today the Samsung Group makes up 516 firms in total and in general focuses on Samsung Electronics as the most successful sector. Moreover is the corporate structure of Samsung Electronics heavily vertically integrated which allows the company to control every step of production processes as well as pre – and post-production operations. These firms although now very powerful and rich still had a rough start as entrepreneurship was a difficult undertaking in the early developmental processes of the country in the 20th century. However the involvement in the electronics sector only came into being in the year 1969 but it cost the company dearly however the risky investment was worth it and as a chaebol the Samsung Group could afford to spent countless financial capital in establishing itself in this industry even though in the beginning losses were enormous. Already in 1975 Samsung Electronics got enlisted on the Korean stock market and the value of its stock prices rose rapidly and is now one of the highest of all Asian companies. (Ali et al. 2011, 2881; Kenney 1998, 23; Chang 2012, 1440, 1443; Samsung 2015, 47; Glowik 2016, 133, 145-148; Lee 2006, 10-11, 18-19, 21.)

Samsung could not count on technology transfer from foreign firms as these were not particularly

inclined on helping the developing and backward Korean company which forced it to imitate the products from abroad and acquire them as well as develop them further. This pushed the entire electronics sector of Korea and turned it into what it is today. (Ali et al. 2011, 2875, 2881.)

At the roots the company was not innovative and the initial copied products were of average and mediocre quality and showed nothing of the agile designs it is known for nowadays. However Samsung started early on with their highly successful production of DRAM in which it became the sixth largest company in 1996. The technology for doing so had been required from copying the production processes from American and Japanese companies and reverse engineering and although the quality was lacking in the beginning the semiconductor business which had been triggered by the same multinational firms that had not wanted to provide Samsung with more opportunities, still provided Samsung with the financial means it needed to grow. However before the DRAM business could become Samsung's driving force money had to be spent to acquire the latest DRAM chips technology which was conducted early on through governmental projects with enforced cooperation between the Korean semiconductor businesses as well as later on through task forces researching this particular field in Korea as well as in the US through highly competent researchers and special training to fully understand the technology and be able to apply it in Samsung's manufacturing facilities with the goal of large-scale production. Due to Samsung's tactical planning it even managed to further develop the latest DRAM technology before everyone else as well as produce it on a larger scale, mostly thanks to parallel research teams in Korea and the US which gave Samsung two possibilities as to when and how the process could be achieved. After this breakthrough Samsung's development of semiconductors went exponentially viral and brings Samsung to the point where it is today in the business of semiconductors: to the top of the market. This initial success also gained Samsung the respect of other companies as well as the acknowledged potential of becoming a bigger rival in the field of electronics. The next step to success was the investment in the home appliances industry that brought Samsung's products in the homes of Korean families as well as to consumers abroad. Through intense investment in research and development more and more products were added to Samsung's portfolio with consideration of the varying tastes of different regions. (Ali et al. 2011, 2875, 2879-2880, 2882-2885; Fan 2011, 837; Kenney 1998, 18-22; Lee 2006, 22-23, 37.)

Since 1994 Samsung is realizing its attempt to further globalization which it connected to a change in the corporate management system of the firm, which allows it to hold nearly 200 branches in the entire world. Samsung Electronics also turned out to be the biggest and most innovative and fastest developing branch of the Samsung Group that wins over customers and out-rivals competition by offering product lines such as the high-class Galaxy smartphones and Smart TVs. In general Samsung Electronics deals in three kinds of electronic developments: consumer electronics such as TVs, information technology and mobile communication such as smartphones as well as device solutions which can be described as for example semiconductors and LCD panels. Samsung Electronics furthermore has 158 subsidiaries belonging to the Samsung Group which can be found in South Korea as well as in foreign countries all over the globe. The deep connectedness in the Samsung Group allows it Samsung Electronics to keep competition inside the Group high and also to improve to a larger extent from the company's own research and development as well as work together more closely to improve quality and speed of market launches. Also the production facilities of the firm are becoming more global as Samsung increased foreign direct investment and is looking for locations with high state subsidies for building manufacturing plants, such as in China or Eastern Europe. (Ali et al. 2011, 2886; Lee et al. 2015, 2; Samsung 2015, 47-51; Glowik 2016, 145-148, 150-151.)

4.3. Economic successes

In 2010 the company created revenues of 154,630 billion KRW; in 2012 the number had risen to 201,104 billion KRW. In the year 2014 in December Samsung Electronics made 206,205,987 million KRW in revenues which indicates a decline in comparison to the following year 2015 where the revenues were 200,653,482 million KRW. This number rose again slightly in 2016 with a value of 201,866,745 million KRW. In 2010 the net profit was 16,147 billion KRW; in 2012 the profit had risen to 23,845 billion KRW with a decline in the year 2011. From the 2014 revenues the profits after taxes were 23,394,358 million KRW which again shows a decline of profits over time which were 19,060,144 million KRW in 2015. 22,726,092 million KRW make up the value of profits after taxes at the end of 2016. The current assets of the firm made up 262,174,324 million KRW including the non-current assets in 2016 and this value rose constantly over time beginning with 134,289 billion KRW in 2010. In contrast the current liabilities made up 69,211,291 million KRW in total in 2016 which again shows a steady light rise coming from 59,591 billion KRW in 2012. The total equity came up to 192,963,033 million KRW which also demonstrates constant augmentation considering the equity of 121,480 billion KRW in 2012. The assumed goodwill of the firm comes up to 739,576 million KRW in 2014 which shows an increase in comparison to the 2013 value of 560,534 million KRW. (Samsung 2015, 40-42, 77, 79; Samsung 2016, 10, 199-204; Samsung 2017, 110-114; Samsung 2013, 2.)

Samsung has huge market shares in the electronics industry globally as well as in their home country and it is the world's largest consumer electronics distributor since 2005 after overtaking Sony. Samsung's product DRAM was the leading product of this particular electronics field and has been highly popular for numerous years. In 2015 the leading products were TVs which received a market share of 27.6 per cent, over-size TV panels larger than 60 inches with a share of 39.1 per cent in 2014 as well as ultra-high definition TVs which gained a market share of 34.1 per cent in 2015. Samsung furthermore developed a new level of UHD TVs which are expected to gain significant market share in the next few years as their launch was already quite successful. Concerning the mobile phone market Samsung managed to gain 22.1 per cent of the global market and the company was even more successful with its smartphones coming up to 22.2 per cent in 2015. These numbers were reduced about 2 per cent in 2016. Also the newest DRAM technology used in smartphones makes up 47 per cent of the total market share in 2016 and SSD cards came up to over 34 per cent. Another highly successful product of Samsung are commercial displays as well as devices for the home such as refrigerators and washing machines. These products are marketed all over the world and are produced and designed as well as sold in nearly 220 facilities which are lead and managed through 15 head offices. In 2016 the company had 308,745 employees in nearly 80 different countries. (Ali et al. 2011, 2875, 2880; Kenney 1998, 1; Samsung 2015, 10-11, 18-19, 22-23; Samsung 2016, 11, 13, 17, 19, 134; Samsung 2017, 8-9, 12, 14, 62.)

Samsung is the most successful Korean firm in terms of firstly reached sales of a value of over 100 trillion KRW as well as a net income of over 10 trillion KRW. (Ali et al. 2011, 2880.) Moreover Samsung is such an enormous company that it is responsible for 22 per cent of the exports of Korea as well as for 8 per cent of all tax revenues in 2006. (Hussain 2006, 86.)

Samsung is seen as the Korean company which was the first to actually create innovations on its own before other innovative firms emerged on the Korean market. This gives the company a position of leadership in the process of taking the important step of innovation produced in the country itself in comparison to the other Korean firms existing and emerging in the same time frame. The next step that put Samsung in a leading position of owning over 32 percent of the market share in the electronics industry in 2013 was after launching the Galaxy S product line. (Ali et al. 2011, 2876; Lee et al. 2015, 3.)

In contrast to other chaebol in Korea Samsung has managed to change from an old system of familiar bonds and an influential seniority principle towards a human resources system focusing more on the available work force and less on connections to hire the best possible person for a job. This makes Samsung the Korean company which has the most progressive system for hiring employees in Korea and actually going through with it, particularly on their upper management level. (Chang 2012, 1449.)

All in all nowadays over 308745 employees work for Samsung Electronics, of whom about 93,204 are employed in Korea and more than 20 per cent of all workers are responsible for furthering the research and development successes of the company. Samsung has the most employees working in the Southeast and Southwest Asian region and Japan, namely over 250000. Also recruitment is the most intense in these regions. Considering the educational level the average Samsung employee has so has to be mentioned that about 25 per cent of the staff can offer Masters or Doctors degrees in the company. Nearly 60 per cent of Samsung's employees are younger than 30 years old. Only 12.6 per cent of the staff is over 40. The Korean staff employed abroad is working in various positions. (Chang 2012, 1443-1445; Samsung 2016, 50-51; Samsung 2017, 34.)

Another issue Samsung emphasizes is its love for supporting the community and the position of corporate citizenship Samsung as conglomerate holds which brings social responsibilities globally such as offering educational programs, infrastructure in regions hosting Samsung's facilities and medical attention facilitates in 104 countries. (Samsung 2016, 108-110.)

4.4. Catching-up techniques

In the beginning of Korea's economic development from the 1960s to the 1990s imports were restricted by the state as were foreign involvement in certain Korean industries and export numbers were supposed to rise which fueled the creativity of the country and the Korean people itself to be innovative and develop these desired foreign products on their own. This tactic actually turned out to work fabulously and pushed the Korean electronics industry a great deal as the state was very cautious during the whole process to lead the companies and the market in a prosperous and future-oriented direction. This furthermore included the attempt to reduce unemployment numbers however at the same time kept workers' rights not even at a bare minimum, which included the prohibition of workers unions. (Ali et al. 2011, 2875; Wong and Cheong 2014, 379; Kwon 2010, 23.)

Korean companies were not able to enter the world market directly with their own designs and products, before they had to learn to imitate the products foreign lead countries already could manufacture on a casual basis. The skills to be able to manufacture foreign products were achieved by reverse engineering certain goods and through technology transfer happening voluntarily or involuntarily. Knowledge could also be accumulated by the help of foreign firms such as multinational companies if these were willing to share their information and technologies. However a problem occurring often during this stage is the helplessness of developing countries as these cannot judge from experience which innovations might be most useful to them and their market and production systems to push them further up the development ladder and guarantee their goal – indigenous innovation – at the end of the line. After this step was incorporated into a company's processes the imitated products were developed further and for example fine-tuned to certain needs the Korean people specifically demanded from these foreign products. This shows that the process of imitation was not blind but needed to be furthered with great care to ensure positive and frugal outcomes for example to slowly loosen the dependence from the originals of the Western companies. These experiences were furthermore used to lead to the final most important step for continuous economic growth: in-country innovation which is supposed to function without any foreign inputs. This had to be accompanied by changes of the political mindset to support innovative developments more as well as a growing and constantly improving infrastructure and the will of the Korean

people to act out their entrepreneurial aspect. At this point the firms which managed to come as far became leading companies themselves which inspired other companies to imitate technology and processes from. On the other hand these countries which completed the stony road to their own proper research and development facilities turn into serious competitors of the firms they once imitated. (Ali et al. 2011, 2876, 2879-2880; Fan 2011, 837; Wong and Cheong 2014, 378-379.)

Concerning the process of innovation in developing countries the highlight should be pointed at the quick and country-related development of innovation processes in contrast to the innovation of new products or product-types. This most likely relies on a certain amount of capital to conduct research and development which was possible for Korea's chaebols as the government generously offered funds for innovations as well as co-funded expensive undertakings with high risks to avoid failures for the companies. However one has to consider that primarily the chaebols were supported which left small and medium enterprises with hardly any governmental support. An issue that is still present as Korea's small enterprises struggle hard to not fade into insignificance without aid. Their only opportunity is to work together with chaebols; however this tactic also limits their options exceeding business relationships with the conglomerates. (Ali et al. 2011, 2876; Wong and Cheong 2014, 380.)

As in other countries developed or developing, massive innovative changes fuel further innovations after this image or following in the footsteps or same field as the disruptive innovation made. This effect might also come to pass when multinational concerns enter a market in a developing country. Next to the knowledge transferred through this way, the innovations these firms bring into the country can also trigger other innovations purely undertaken by regional companies. However also the purchase of goods countries want to manufacture themselves can lead to knowledge transfer as usually the original sellers also offer trainee ships with the equipment which helps with reverse engineering or copying the products. (Ali et al. 2011, 2879; Kenney 1998, 22.)

Foreign direct investment did not lead to a strong dominance of foreign firms on the South Korean market in their respective fields, mostly due to the hostile conditions they had to encounter in the market as well as state policies which were dropped in their way. These factors made foreign firms look for friendlier business opportunities in other parts of East Asia which furthermore soon became cheaper than South Korea in terms of work force costs. Still some knowledge was transferred from the developed countries to South Korea. However Korea also saw to it that subcontracting played a more dominant role in their catching-up processes. Under projects of original equipment manufacturing Korea fulfilled specific production requests in the country but the products were all sold as the company brand which had arranged these projects. This mostly meant assembling pieces in form of easy conveyor belt work. Through this method the Korean work force was able to gain know-how to produce similar goods themselves. As the abilities and skills of the work force increased the relationships with the foreign companies changed as well into more equal partnerships. However the Korean companies were still lacking skill sets such as proper marketing and branding to actually sell their own products and give them recognition on the global market. (Coase and Wang 2013, 150; Fagerberg and Godinho 2005, 533; Ali et al. 2011, 2881-2882; Kenney 1998, 10-11.)

It is argued that South Korea followed the example of Japan in its catching-up process. As the process was heavily supported by the state private firms and chaebols were lured into following the states' wishes with credit rationing and support by the government in general, as it tried to push the creativity and innovation energy of Korean companies by giving them good and successful examples for smaller enterprises to look up to and follow. Moreover are the Japanese firms supposed to have an approach to foreign technology that goes further than simply copying the technologies and processes in question but are actually keen on implementing their newly learned processes in an appropriate way to fit smoothly into their firms. This could also be said about

Korean companies during their catching-up operations. (Fagerberg and Godinho 2005, 520-521; Ali et al. 2011, 2877; Wong and Cheong 2014, 379.)

South Korea used a lot of lent money from abroad to finance its catching-up processes which eventually lead to relatively high debts which were not regulated by the state but by the chaebols which caused a financial crisis between 1997 and 1998. (Fagerberg and Godinho 2005, 522-523.)

Samsung Electronics specifically does not rely very much on the first-comer advantages but prefers to watch how other competitors are doing with their products and improving them first to appeal to an even larger audience. (Glowik 2016, 156.)

Korean electronics companies also were not looking anxiously for collaborations and joint ventures but only discovered this method of working together to be useful starting from about 2000. (Fan 2011, 837.)

4.5. Indicators

Following are detailed descriptions of how Samsung Electronics fits into the Schumpeterian indicators I described in chapter two.

4.5.1. Innovation tactics and productivity growth

Samsung is trying to stay on the top of its game by offering digital products, e-processes and services, a movement that is known as digital convergence. It attempts to turn into an e-company and to do so it has to research heavily on network technologies as well as further development in the culture of the company to facilitate and improve corporate management. (Ali et al. 2011, 2885-2886.)

Samsung attempts to collaborate with other companies and tries to form alliances with its competitors in terms of research and development of customer electronics and puts efforts into forming marketing opportunities with numerous media outlets. This kind of thinking also led to parts of the Group being founded, for example through joint ventures with foreign companies working in the same fields Samsung was interested in and wanted to gain market leadership. Samsung sees to it that it acquires innovative firms to be able to use their technology if it seems useful for Samsung's product lines. Samsung also offers financial aid to small start-ups or allows them access to its own advanced technology if they agree to cooperate intimately with the conglomerate and can use the developed technologies in their products. (Ali et al. 2011, 2887; Samsung 2016, 132-133; Glowik 2016, 137-138.)

An issue which is taken very seriously by Samsung is the idea of continuous learning and self-development as well as boosting one's own abilities and skills. Only a never ceasing learning curve will push Samsung into the league it attempts to enter and well-trained employees are a significant factor for this undertaking. This furthermore includes the stimulation of a certain creativity and independence of the employees as Samsung realized how trend-setting these skills are. The in-house training facilities for new employees are particularly efficient and are an essential asset on the path Samsung has planned for its successful future to gain more market shares through the army of loyal Samsung employees they are raising. This also includes creating specific experts for certain fields to enter new markets more easily or improving marketing and selling techniques abroad and learning to adjust quickly to the fast changing market situations nowadays. (Chang 2012, 1449-1450, 1454.)

The fields in which Samsung sees the most potential and where it wants its employees to succeed particularly are marketing and sales as well as research and development. (Samsung 2016, 47.)

Samsung's management and company philosophy follows an extensive code of conduct in which almost every area of business is documented. This code of conduct is derived from five business principles which turn out to be: the compliance to laws as well as ethical standards, a properly structured organization, the respect for every stakeholder, the focus on the protection of the environment and the employees and the social factor Samsung holds as a conglomerate. (Samsung 2016, 185-196.)

In general it can be stated that the human resources management in Samsung Electronics has been influenced heavily by popular Western management techniques. However the basics of the Confucian system influencing society still have not disappeared entirely and a heavy similarity to military structure is in place. (Chang 2012, 1452; Glowik 2016, 133-135.)

The business philosophy of the firm is summarized by the company slogan: *"To devote our human resources and technology to create superior products and services, thereby contributing to a greater global society."* (Quote, Samsung 2016, 8.) This slogan indicates that the consumers' wishes are in the focus and are realized through the talented work force of the company. (Lee 2006, 17-18.)

Samsung sees to it that employees or potential employees are chosen according to their qualifications and are not prejudiced against according to their race, gender or other features. Laws of the country Samsung holds facilities in are supposed to be met. For its employees Samsung wants to create an atmosphere as productive as possible and to support its personnel properly Samsung spent 3.853 trillion KRW in employee benefits in 2015. (Samsung 2016, 41-42, 48.)

Before heavier restructuring was in order to become more competitive on the global market Samsung was a company based on the ideals of Korean society and traditional values which allowed its employees to enter the firm and work there their entire lives and gain bonuses during their work lives lead by the hierarchically structured management and by a paternalistic system in general which is displayed in a system of togetherness and deep loyalty to the firm as well as a sentiment of connectedness to the values the enterprise stands for and the assurance that the seniority principle is written in capital letters. (Chang 2012, 1441-1442.)

However now the company has gone through internal restructuring particularly in the field of human resources and connected issues, which were partially heavily influenced by the government. This can be traced back to the changes in the economic situation Korea has experienced and the always adapting wishes of society and abilities it can afford. It is also possible that the growing form of the chaebol forced Samsung to carry out internal changes and reforms as a larger company also requires a different form of management. What changed furthermore are the expectations of new employees as younger members of Korean society who do not expect to continue in the traditional ways established in the company for years, as these apply more to an older generation. Now Samsung sees to it that the most competent personnel is employed which might lead to not only considering the pool of the Korean work force but also have an eye for international gifted employees such as foreign scientists who are able to implement foreign knowledge or introduce an entirely new way of thinking or out-source some jobs if possible and of fiscal advantage. Creativity and self-dependence are values that became more and more important over the last few years and Samsung sees to it that many people fitting these criteria work for the company. Job security in the firm is not a necessary priority anymore, now many jobs were reduced in comparison to before the restructuring and some were turned into part-time jobs. The abilities and skills of the staff are measured individually and regularly which was not always the case during the seniority system. Moreover are training and improvement a part of the job description to see to it that the Samsung employees are constantly brought up to date and can serve the company and its values as efficient as possible and climb the corporate ladder if they prove competent and far-sighted enough with the possibility of becoming experts in certain fields the company values and deems most important for its survival and development. Samsung's efforts in the field of employee development prove to be one of the most dedicated in the field which earned the company the third place in the Association

for Talent Development BEST Awards in 2015. Samsung offers after-work clubs and cultural programs to entertain the employees also outside of work as well as a mental health center which cares for the psychological well-being of the work force. Higher positions might also be occupied by choosing people from the pool of employees at Samsung as a form of reward for good work performance. All of these initiatives are supposed to improve Samsung's human resources management and guarantee a lesser change of personnel and volatile staff movements as training new employees is always related to costs and efforts. (Chang 2012, 1438-1439, 1441-1442, 1444-1445; Samsung 2016, 40-45, 48.)

Interestingly enough Samsung requires its potential future employees to undergo extensive testing, the so-called Samsung Aptitude Test that was developed specifically for the company and asks its potential recruits to proof their knowledge in various fields such as English, Korean, sciences, news and a personality test. (Chang 2012, 1445.)

Also heavy recruiting from young talent growing at universities is undertaken. Scholarships are offered to talented students worldwide with the goal of recruiting them before another company does and Samsung Tech Institutes also offer local citizens and students the chance to educate themselves in the fields of technology through a total of 188 programs. Samsung also offers IT supported school projects in Korea which might have the goal of creating talent at a young age particularly in the field of programming to foster future well-educated Samsung employees. Another project allows students to offer ideas and solutions for problems in their everyday life all over the world. If these solutions are above average the students are supported by Samsung to realize their ideas. Also foreign talents are heavily recruited by Samsung, as are Koreans living abroad to get fresh ideas into the company. (Chang 2012, 1445; Samsung 2016, 114-115, 117; Hussain 2006, 91.)

Three yearly evaluation procedures are conducted to measure the performance and progresses of the employees as well as offer bonuses and potential promotions to excellent workers, everything depending on the position the employee stands at. Also a form of self-assessment is possible in this system. These procedures help the management in better instructing its subordinates as well as help them improve further and become more competent and efficient with the help of the evaluation. Furthermore fairness is guaranteed as everyone is evaluated by the same criteria according to their positions. (Chang 2012, 1446-1447; Samsung 2016, 43, 46-47.)

An interesting tactic to improve the life-work balance of its employees and their overall satisfaction and free time in general was accomplished by introducing a work day that runs from 7 a.m. to 4 p.m. However employees are also able to choose flexible working hours as well as the possibility to work from home. (Chang 2012, 1443; Samsung 2016, 42, 48.)

To keep competent talent in the firm Samsung offers its employees the easy option to change jobs in the company. Even if employees want to leave the company Samsung offers the services of a Career Consulting Center which prepares employees to change jobs or to become freelancers or entrepreneurs themselves. (Samsung 2016, 47.)

Samsung furthermore installed a system for internal complaints employees can voice if they encounter problems with superiors or general troubles they come across in their work life. Employees are able to use numerous channels to express their opinions such as online, on the phone, in written form or in committees. Depending on the problem the issue is resolved as fast as possible and the concerned employees' personal data is protected and anonymous. The results of the complaint are relevant as well and if the employee is not satisfied with the way her or his complaint was managed she or he may apply again for a more fulfilling outcome. (Samsung 2016, 75.)

Moreover are work councils engaged to ensure the laws and rights of employees are being protected, potentially to offer a substitute for missing labor unions. (Samsung 2016, 76.)

Samsung has up to 2700 suppliers it holds close partnerships with, which are available on a short-term notice and allow it the firm to offer different products in certain product lines according to the customers' demands. This form of supply just manufactures on demand which means not a lot of

money has to be used on goods storage costs. The entire system of producing and delivering is organized to save costs; a lot can be planned in advance and ensures time tables are upheld. Moreover is it seen to it that the system of manufacturing is kept as easily as possible to guarantee short lead times and cheap and efficient production. Modular manufacturing and modular production are techniques used by Samsung to manufacture and produce the cheapest way possible by splitting the processes of manufacturing and assembling into two separate steps carried out by whoever offers to do it the cheapest. All the manufacturers are connected with Samsung via the online system Glonet that allows everyone involved to see orders and availability of certain manufacturing parts and allows a quick intervention in either direction if need be. Samsung stands in keen contact with its suppliers and likes to share technology to furthermore help the supplying firms improve their products as well as their business opportunities, as the growing abilities of the suppliers also support Samsung's opportunities which is necessary to keep up with the competition. This is ensured by also offering training programs for employees of Samsung's supply chain and an open ear to supplying companies facing troubles. This also includes financial support for the suppliers and fair consideration of volatile prices for raw materials as well as transferring corporate culture and values as well as managerial know-how to the supplying companies. The management behind pushing the suppliers to their top capabilities was as demonstrated not only by proper management but furthermore by considering the environment, by adding Samsung's ideology and by strategizing a proper way of conducting the suppliers' path into greatness. This moreover creates jobs in the supplying companies Samsung uses. The entire supply chain management is under constant risk assessment to be able to intervene quickly and successfully even in cases of natural disasters or other events difficult to plan for and foresee. (Lee et al. 2015, 3-8; Samsung 2016, 25, 84-86, 90, 93.)

Samsung furthermore expects its employed materials to be faultless which requires constant material quality control. The material is also requested to withstand the high standards of European sustainability expectations and is tested accordingly to this matter. Issues that appear through the testing of the materials are evaluated and reviewed considering the heaviness of their impact for society, clients, suppliers, the environment, the stakeholders as well as on the product itself. Finally all these issues have to be improved if possible or the negative side effects have to be reduced as well as possible. Samsung is of the opinion that an improvement of such issues might be strenuous and costly but pays off in the end through higher revenues, lower production costs as well as better risk management and control. However in 2016 the Samsung Galaxy Note 7 caused a large products recall which could be lead back to faulty material in the batteries. This finally caused the safety measures for batteries to rise and the introduction of additional testing. (Samsung 2016, 26-29, 87-88, 104; Samsung 2017, 42-43.)

Connected issues are the important attempt of preventing human rights violations through the suppliers involved with Samsung following the Samsung Supplier Code of Conduct as well as the guarantee to not utilize critical materials which come from sources with conflict involved in the extraction processes. The living situations of the miners as well as the family of the workers in third-world countries are also of interest for Samsung. To ensure the compliance with Samsung's desired goals the suppliers are monitored and inspected regularly. If the suppliers do not reach the high expectations demanded by Samsung they will be downgraded in Samsung's value system and will be gradually replaced and not used as suppliers anymore. (Samsung 2016, 35-36, 83, 85-87, 94-102.)

Samsung tries to ensure open communication channels and good relations with every possible stakeholder which includes next to the obvious parties involved such as the employees, the suppliers and the shareholders the media, NGOs as well as the government. Points of overlapping interests are covered by Samsung's communication channels. However there are numerous issues of political or scandalous nature going on in the company which Samsung does not comment on

although there are very present. More of these will be summed up in later chapters. (Samsung 2016, 32-33; Samsung 2017, 5, 24.)

Samsung furthermore feels a necessity to put the customers into a bigger focus of the company's targets which it has to improve in the near future. (Ali et al. 2011, 2886.)

To keep the customers happy the factor of quality control of the products and production parts is of grand importance to Samsung and is assured by numerous quality checks and measures. This reduces the time Samsung has to deal with faulty products and dissatisfied customers. Moreover are the costumers themselves asked to evaluate the services Samsung offers as well as the satisfaction level of the product's quality. This can be done quite easily by various efficient and monitored methods of communication such as through 20000 service centers Samsung holds worldwide as well as online via webpage or via phone. Specifically for the repair of Samsung's smartphones special services are offered to guarantee clients easier access to service stations if needed. To guarantee any customer an agreeable experience with Samsung's products the company attempts to follow the 4C concept which includes considerate design fitting the consumers wishes and expectations, a comprehensive layout anyone can use, a coherent product experience guaranteed for any Samsung product and co-creation with the customers and explicitly for the customers. The company attempts for example to help autistic persons or deaf people whose lives are facilitated by the company's smartphones and specific apps. Other customer service features Samsung offers are for example tablets with sign language videos in Samsung stores to better aid the hearing-impaired as well as special services in the Middle East to provide female service personnel for home services if desired by female customers. (Lee et al. 2015, 4; Samsung 2016, 104-107, 138-139, Samsung 2017, 54.)

Samsung is keen on risk management and avoidance of problems altogether which becomes harder and harder to manage in nowadays volatile economic situation but is aspired by employees and management equally and controlled by regular measures of risk assessment for every region and level of the company, including the supply chain. (Samsung 2016, 24, 87-88.)

As for any other large firm with a lot of competition marketing plays an essential role in Samsung's business strategy. To keep its reputation as a supplier of high-quality consumer goods Samsung spends up to one billion Euros a year to promote its brand all over the world. Through this high available sum specific target marketing is possible and shows potential customers the full range of nicely designed Samsung products. From the product line Samsung offers smartphones as well as TVs are particularly prestigious and putting these goods in the focus of Samsung's advertising concept is certainly helping the company gain customers because on the one hand there is a lot of competition on these fields which means being able to demonstrate the high quality of one's products is particularly empowering, on the other hand are the customers already owning Samsung phones and TVs most likely to advertise them on their own if the quality is convincing. The fact that Samsung reduced its collaborations with stores radically and only let a few certain stores sell its products gave them an image of exclusivity and quality. Also the improved corporate identity through the company philosophy indicates potential customers that Samsung is not your average replaceable electronic devices store but has a bigger concept standing behind it. Another chance to draw attention is the sponsorship of sportive events such as the Olympic Games and many other sportive festivities and competitions, even e-sports competitions for example through paying the prize money. Other options Samsung uses extensively are product placements in movies and the involvement in movie franchises. (Glowik 2016, 151-154; Lee 2006, 12, 29, 44, 60-68, 76-77.)

Brand equity is also heavily dependent on marketing efforts of a company, particularly brand awareness. Things such as customer loyalty and perceived quality of offered products become more and more important in nowadays world and are desired by companies and enhance the status of the particular brand. In connection with new technologies and online services Samsung wants to offer,

brand equity again changes its meaning and is more difficult to assess than with actual products, particularly as the evaluation of innovative services online is complicated. However in general a perceived high level of innovation is attractive for customers, as are market-leading products. Moreover customization of personal products makes the firm offering such services more attractive to customers. (Atashfaraz and Abadi 2016, 327-334.)

All the innovations and tactics Samsung Electronics as well as the entire Samsung Group implements are closely watched by other Korean smaller-sized firms which tend to imitate the changes and innovations of the chaebol. However not only small companies are imitating Samsung's strategies, also its huge competitor LG glances at Samsung and gets inspired by the firm's marketing strategies. (Chang 2012, 1453-1454; Lee 2006, 63.)

Samsung Electronics is keen on being seen as an innovative company and attempts the creation of new technologies and products for the pleasure of its consumers and the facilitation of their lives. It attempts these outlooks by heavily promoting innovative spirits in the company and under the employees which are encouraged to be creative in the form of house intern competitions. The best results are developed further and might even be commercialized. Samsung also established an online system in which employees can connect and discuss work projects or innovations or improve projects or work steps single handedly in cooperation with each other. If more than one employee comes up with a creative idea they can form teams to work on certain ideas together. (Samsung 2016, 9, 124-130, 138.)

4.5.2. Entrepreneurial aspect

Lee Kun-Hee is currently officially the chairman of Samsung Electronics and has been controlling the firm absolutely since 1987 after his father, the founder Lee Byung-Chull passed away. The Lee family also appears to own the company in the sense of control but also of actual fiscal possession. Lee and his family officially hold four per cent of the Samsung Group shares, but also in connection to Samsung Electronics own a large amount of shares of companies related to the Samsung conglomerate which themselves own parts of Samsung Electronics. All the shares come up to a value of 10 billion Euros as of 2012. As the Samsung Group is heavily connected in such an essential matter it also could be quite volatile if one sector sees troubles in profits. (Chang 2012, 1444; Lee et al. 2015, 2; Glowik 2016, 134-135, 140-144; Lee 2006, 23.)

The chairman as well as the current CEO Oh-Hyun Kwon and the company presidents and CEOs Jong-Gyun Shin and Bu-Geun Yoon were very involved in the happenings at Samsung Electronics and saw to it that numerous changes were implemented since Lee took over the firm. Showing their care and responsibility for efficiently leading the firm sent everyone, higher and middle management, employees as well as shareholders and stockholders the message that the upper echelon does everything in its power to improve Samsung. Lee Kun-Hee himself also liked to offer philosophical business advice to improve the company with proposed and later established core values such as improvement in every way as well as just management and trust in the work and abilities of the suppliers. His own management style furthermore could be called unusual as he even took part in personally overseeing the production and testing of new products. Lee also pointed out weaknesses of the Korean society which hindered the country on becoming even more successful economically. It is mostly acknowledged that Lee Kun-Hee's wise council and leadership qualities were mostly responsible for turning Samsung into the successful company it is today with the chairman's focus on excellent employees, even better managers and clever investments in prosperous business sectors. It was him who suggested an internal reform concerning a less strict hierarchical scheme and loosened up the strict gender inequalities by supporting women in higher positions. Also the foresight of the chairman gave Samsung an advantage compared to other similar firms as Lee recognized China as a large competitor rather soon and urged to focus on

manufacturing high-quality goods to gain product advantages. (Chang 2012, 1451-1452; Lee et al. 2015, 7; Samsung 2016, 5, 23; Lee 2006, 34-37, 47, 52.)

However there are proven cases which show that the complete control of the owner might do the company no good considering its future developments, for example the case of the attempt to enter the auto industry which failed but was pulled through as Lee Kun-Hee desired so. Other business plans were also doomed which had already been known in the planning stages however the will of the owner was stronger than reason and numbers. The option to close down such failed undertakings is also hardly seriously considered. (Hussain 2006, 80-81.)

Lee moreover let himself be inspired by sports and sports philosophy as well as sportive spirit. He was of the opinion that doing sports is not only helpful for the fitness or work-life balance but also teaches the athlete useful lessons she or he can adopt for their respective job. Invaluable life lessons are learned by indulging in various different sports activities which improve the employees' business skills and team work abilities as well as following rules and sportsmanship. Lee himself was a member of the International Olympic Committee. Moreover was the chairman sure that fair and sportive competitions are able to bring people together and even create peace between nations politically antagonized. (Lee 2006, 42-45.)

The chairman also created a sense of crisis in time of prosperity to encourage the employees and the upper echelon to keep their wits and their minds sharp to become even more creative and resourceful to prepare for times of crisis which really were to come. Lee could be considered a perfectionist and a person yearning for constant control. These character traits also allowed him to actually make good decisions according to all the facts available. However due to grave health issues the chairman is not involved in the company anymore since 2014 but still his legacy and company philosophy molded the firm and made particularly Samsung Electronics highly successful during its years of development which is why the influences of Lee are mentioned here in more detail. (Lee 2006, 46-47; Welter 2017, online article; Fifield 2017, online article.)

Lee became involved in his father's company soon after he had finished his studies in Japan and the US. Although having two older brothers his father the company founder made the youngest son the heir of the conglomerate. Lee himself fathered one son and three daughters from whom the youngest daughter committed suicide in 2005. (Lee 2006, 47-48, 51; Unknown author 2005, online article.)

As a part of a chaebol Samsung Electronics is lead as a classical Korean family enterprise which means that the corporate structures are inspired by the values Koreans appreciate in their lives such as clear hierarchical lines as well as a strict managerial concept usually occupied by related members of the owners family as their loyalty, devotion and control are guaranteed that way. This technique is used due to the reason that the familial system is supposed to bind the staff closer together as well as closer to the company. Moreover is it a known basis for the Korean personnel in a country which long followed the idea of Confucianism which still holds a lot of value in society. (Chang 2012, 1440-1441.)

As Koreans value close personal connections these are furthermore an important issue in the business world, called yon-go which is moreover a reason for the implementation of relatives as staff in chaebols. Also people of the same origin and with the same educational carrier personally known to someone in the company are possibly preferred in managerial positions. (Chang 2012, 1441.)

Considering the follower of the owner Lee Kun-Hee it was always clear that his son Lee Jae-Yong was intended to become his predecessor. He was particularly groomed for his future job however many shareholders were worried about this day as previous experiences of Lee Jae-Yong working for Samsung and having responsibility over internet-related start-ups which failed demonstrated that he might not be as able as his father to lead the company one day. However since 2014 and a heart attack Lee Kun-Hee suffered, Lee basically already lead the firm as vice chairman as well as one of

four executive directors which apparently did not damage the company's revenues or profits. He however will not be able to continue doing so as he is heavily involved in a bribery scandal connected to former Korean President Park Geun-Hye and might face up to five years in prison, which he was sentenced to by a court in August 2017. Sentences over three years cannot be pardoned completely which means Lee will for sure serve some time in prison even though his lawyers appealed to the verdict. Lee Jae-Yong wanted to assure his position in the company by merging two parts of the Samsung Group which had to be allowed by the national pension service closely connected to the president. To guarantee a positive outcome of this deal Lee and other company managers promised up to 38 million US-Dollars to the former president. This situation leaves open the question as to who will step up as Samsung's entrepreneur or if one is even necessary. (Hussain 2006, 97; Lee 2006, 174-175; Welter 2017, online article; Samsung 2017, 20; Fifield 2017, online article.)

Not only the family structures influence the corporate system of Samsung but also the state and its institutions as close relations can be drawn from the existing institutions which are mirrored by the chaebol. Also the fact that Samsung Electronics is enlisted influences the company as shareholder value maximization is a focus of the firm to not disappoint its shareholders and value and incorporate potential opinions shareholders of importance may hold. In general the upper echelon of Samsung Electronics is strictly organized in boards and the directors and independent directors are chosen by the shareholders. The board of directors is also supported by six specialized committees. (Chang 2012, 1440-1441; Samsung 2016, 6, 22-23.)

As Samsung Electronics is a part of the bigger Samsung picture its techniques must not diverge too much from the other firms comprising the Samsung Group. However there are certain differences such as the more advanced human resources management as well as a more future-oriented management and corporate culture. Furthermore in contrast to other firms the employees of Samsung Electronics are not represented by a labor union, allegedly because they do not see the need in being represented by one. Maybe the fact that the company pays on average 10 percent more than comparable enterprises is a reason for the silent consent. (Chang 2012, 1450-1451.)

Samsung Electronics managed to expand in such a successful way as it not only relied on itself but also on outside forces such as clustering on a domestic as well as on an international level. After establishing one cluster close to Seoul in its beginning years where the firm only had made its first successes production-wise and wanting to gain benefits from the labor force of the capital, Samsung also added production facilities to other clusters in Korea that had been pulled up by the state and as such connected these clusters. To catch up more properly Samsung initiated joint ventures with foreign firms to have easier access to at the time high-tech knowledge to enter the more advanced semiconductor business. Through expanding its production facilities to foreign countries with mostly cheaper work force Samsung created international clusters with locations that bring the company further advantages such as entry possibilities to large foreign markets. To perform better in the marketing, brand recognition and brand and design value sector Samsung also invested in facilities in developed countries to push these lacking factors through demographic researches as well as under the consideration of ongoing and quickly changing trends; with great success. However Samsung has to undergo even more internationalization to accomplish peak performances as innovative ideas cannot be trusted to be made inside Samsung but can also easily come from outside. (Moon et al. 2013, 79-82.)

Samsung Electronics is not only involved in technological development and distribution of high-tech devices but also tries to support local communities and stands for corporate citizenship which is connected to responsibility for the environment and the people living in it. A sustainable way of existing and producing is desired by Samsung. The company is involved in numerous sustainability projects initiated by the industry as well as additional projects such as human rights support and the

Millennium Development Goals carried out by the UN. Such strategies are nowadays well-liked by customers as well as shareholders and other stakeholders. Samsung sees to it that social value is assured by the company or at least that revenues are not only the biggest company goal but tries to defend its existence by demonstrating its usefulness to the stakeholders as well as the natural environment and other shareholders somehow involved in the production processes and the company environment. The company claims to be eco-friendly and green by focusing on making decisions that protect the planet even further for example by reducing emissions and by planning certain improvements concerning the matter until 2020 and having spent already 6,590 million KRW on becoming eco-friendly. Recycling is also a concept marketed by the company, as are the attempts to use eco-friendly materials as well as create green products to preserve the environment and make them more energy-efficient. The fight against climate change and the preservation of the planet's water reserves are also an important issue Samsung does not ignore as a large company being dependent on using a lot of energy. However Samsung's concepts to battle climate change and become as economically friendly as possible certainly had positive impacts and received numerous awards. Samsung overemphasizes its value by demonstrating that the financial value the company generates is also used for social welfare and the benefits of the environment. The company's benefits are supposed to aid up to 1,453,000 people according to Samsung with a sum of over 523,000 million KRW, money which is used to primarily finance school projects for the better integration of new IT technology in classrooms or in aiding pupils that are not able to attend school because they are hospitalized. Further projects which animate young people to solve everyday life problems even birthed an app that helps discover child abuse more easily or created an app that aids blind citizens in using public transport without bigger issues. For poor communities Samsung established some test villages to improve the living situations in certain regions through medical care, schools as well as features to allow the inhabitants to not having to rely on continuous charitable donations. Health care is also offered in regions with no such service available. Samsung employees are also encouraged to spend some time in poor regions doing development work or offering solutions for everyday problems the local citizens face. (Samsung 2016, 6-7, 31, 108-113, 116, 118-123, 142-157, 161-164, 166-174.)

Connected with the issues of fairness and sustainability also factors such as bribery and corruption are taken seriously and are condemned by Samsung Electronics. Compliance concerning ethical management, abiding the laws, intellectual property rights and data security is another issue that Samsung wants to emphasize and follow more determined in the future. Employees are being sensitized to recognize cases of compliance breaches, have the possibility to inform themselves about issues they might not be fully aware of and are regularly monitored by their superiors and continuously reminded of this problem. Committees with up to 400 employees in the firm have the task to supervise the actions of employees and do preventive work. Samsung sees to it that its compliance regulations are always up to date and go with the time, particularly because ethical economic activity is considered the norm nowadays and guarantees the benevolence of stakeholders. This is specifically the case as Samsung deals with personal information of its clients or allows for online payments via smartphone which are supposed to stay private even though they run through the firm, which requires rules Samsung's lawyers take care of determining. In case of violations of compliance employees and customers can report anonymously to a help desk and serious complaints are checked carefully for trueness. In 2015 58 per cent of complaints were made by customers. To avoid compliance problems and in-transparency Samsung published and lives after a Code of Conduct as well as Business Conduct Guidelines to demonstrate its global goals for the improved wellbeing of everyone and its good intentions. Samsung even emphasizes its compliance to tax regulations and diminishing connected risks as well as the advantages the governments receiving Samsung's considerate tax money gain. (Samsung 2016, 53-63.)

Another issue emphasized by Samsung is the abidance by global human rights. This includes anti-discrimination against minorities, persons with disabilities, genders or sexual orientations as well as the fight against child labor or forced labor, improvement of the living conditions of the workers in foreign countries being part of the Samsung supply chain or reassuring safe working conditions

under any circumstances, particularly for apprentices and migrant workers. Established successes include for example a percentage of over 45 per cent for female workers as well as a return rate to work after pregnancy of over 93 per cent and enforced programs against child labor in Samsung facilities in other Asian countries. Training programs for Samsung employees are used to spread relevant information about the issues of human rights among the workers in Samsung facilities all over the globe as well as help empower disadvantaged members of society working at Samsung. Prevention of injuries or work-related health issues is also attempted by the company as well as the prevention of the spreading of recurring infectious diseases. (Samsung 2016, 64-68, 71-74, 78.)

However as will be displayed in greater detail in a later chapter Samsung Electronics does have its problems with actually realizing the numerous claims they make concerning security at the work place as well as working conditions for its labor force. These allegations show that not all is well in the company and after publications of work condition-related incidents as well as a penalization in 2006 after price agreements with other companies or the easy location changing of Samsung's facilities abroad to cheaper countries at the cost of local work force the public, if it wants to inform itself can see that Samsung clearly has some faults in its seemingly perfect corporate citizenship score. (Wiebe 2013, 218-221.)

4.5.3. Competitors and Competition

Highly competitive forces on the Korean market are the other Korean chaebols involved in the electronics industry which are constantly struggling to out-rival each other. This even makes certain companies spent their budget largely on keeping up with each other without contemplating bigger future goals which might be more useful to invest in. Interestingly enough as a design as well as production company Samsung Electronics sells its products on the one hand to customers who use the final products such as TVs and smartphones but on the other hand also to competing firms which include parts produced by Samsung in their own final products. (Kenney 1998, 4-5; Glowik 2016, 150.)

However also Samsung Group companies are competitors on the market and are producing competing products. Still Samsung Electronics also holds joint ventures in the Samsung Group with companies that are clearly branded with the Samsung name but these joint ventures might also exist for fiscal reasons to move capital inside the Samsung Group. (Gnyawali and Park 2011, 657-658; Samsung 2015, 70-75.)

Samsung supports potential competition in the sense that it offers fiscal help and/ or cooperation to certain Korean small and medium enterprises which act as suppliers for the company. If these suppliers have trouble surviving in the market Samsung offers low-interest loans through partnerships with Korean banks and these offers are dependent on Samsung's say-so and a guarantee to ensure the banks to propose the loans without much inspection. Samsung even goes as far as funding small innovative start-ups with a governmental organization supporting research and development in the country. In 2015 Samsung invested as much as 2.4 billion KRW in this kind of sponsorship. Moreover is the company quick to offer further development programs for suppliers to improve their deficits in certain economic fields or research and development issues. Through a campaign to boost Korean research and development Samsung was motivated to even support firms that are not aligned with Samsung in any way for example through the disclosure of company intern patents. The spreading of information is also conducted by so-called Smart Factories, centers established by Samsung to support Korean small and medium enterprises in their growth and development. (Samsung 2016, 89-92.)

The fiercest competition in South Korea and on the local smartphone market is certainly the iPhone from Apple, which also manages to draw higher profits than Samsung's smartphones are able to.

However the biggest competitor in the country is LG Electronics. This company had been founded in 1959 as a manufacturing and assembling company for another enterprise from the United States and had developed faster than Samsung in the beginning. However nowadays Samsung managed to achieve close cooperation with LG as the two companies have the same roots and also the same rivals in the field. (Lee et al. 2015, 2-3; Glowik 2016, 137-139, 144-145; Lee 2006, 21.)

Companies in the electronics sector have countless competition however despite the risks and uncertainties of engaging in cooperation with the competitors it is proven that cooperation can be valuable for both sides and both companies involved can still battle for consumers at the same time and furthermore are better prepared through their generated knowledge to defy other competitors in the market. Of course this form of co-opetition is not entirely easy to establish and execute but if it is possible many positive outcomes turn up. Technological progresses can be made more easily and more cost-efficiently as well as under the term of shared risks which leads to better and cheaper products for the consumers if it does not come to collusion or other intrigues to undermine the liability of the free market. However these influences that might be won are not necessarily negative but can also raise the standards of the market and qualities and features of the products as well as encourage other companies to do the same. Samsung and Sony, two companies with comparable features which needed each other's expertise in certain fields established a joint venture to produce better high-quality LCD-TVs, a product that at that time turned out to have very short life cycles due to numerous technological innovations going on in this sector. The cooperation was very successful and managed to outrival other comparable products and connected goods and pushed Samsung and Sony in the front row of TV manufacturers even though they were at the same time also competitors. The fact that they furthermore opened their project-related patents to each other did not damage either firm's success and actually Samsung got more out of the relationship than Sony, even overtaking it through a more appealing design than Sony offered. The consumers profited from this co-opetition as prices for TVs fell altogether and the quality of the products still improved constantly. (Gnyawali and Park 2011, 651-658.)

4.5.4. Imitator tactics

Samsung Electronics had to pay a lot of royalties in its beginning in the electronics industry and particularity in the field of semiconductors, a technology it mostly caught up to however the branding, marketing and packaging was an issue that could not be copied so easily which forced Samsung to pay other firms for their products and expertise. However Samsung also saw no harm in just using intellectual property for free which was not necessarily distributed by themselves which caused some juridical conflicts and led to Samsung having to pay penalty fees or having to come to settlements with other firms outside of the court room. (Kenney 1998, 21-22.)

The way of the chaebols and as such Samsung as well is to hire trained personnel from other firms to gain inside into their knowledge and their expertise which some could also consider as an imitator tactic to get inside information or at least a gray area in this field. (Kenney 1998 , 22.)

Recently Samsung Electronics has been involved in a litigation with its competitor Apple Inc. due to infringement of certain technologies, patents and designs in 2014. However this litigation has been limited to the United States. (Samsung 2015, 82; Wiebe 2013, 219.)

4.5.5 Company intern research

The Korean firms were the first in developing East Asia to spend substantial amounts of money in the research and development sector which was mostly, up to 80 per cent, sponsored by the private sector until the late 1990s. In the electronics sector these amounts of financing are necessary to actually make progress as so much can be and has to be researched and developed. Samsung went even so far as to spend more than five per cent of its sales annually in its research facilities,

particularly for its electronics business and kept one fifth of all of its employees working in this sector. (Kenney 1998, 11-12.)

Samsung invests heavily in research and development as well as networking on the behalf of cooperating in the fields of analysis and owns over 30 research facilities worldwide. A special feature is the fact that all these research facilities are connected to process new developments faster and more efficiently. About 62,546 employees of Samsung are working in Korean research facilities. The facilities got a capital of 14.84 trillion Korean Won to push its possibilities even further. In 2014 the value of intangible assets concerning the intellectual property rights of the company made up 1,340,481 million KRW which was a slight raise in comparison to the year 2013. In 2015 the patents registered globally were 5072. (Ali et al. 2011, 2885; Kenney 1998, 12; Chang 2012, 1443, 1449; Samsung 2015, 76; Samsung 2016, 11, 125, 132; Samsung 2017, 34.)

A location of concentrated innovative spirit and research and development energy is the Research and Development Campus in Seoul which was opened in 2015. This facility offers the 4000 employees working there a space to contemplate future innovations and research new designs as well as technological innovations and moreover closer collaboration between the different departments. The campus also offers special lifestyle features next to facilitating the work atmosphere such as outer work activities. (Samsung 2016, 46.)

However not only the collective power of Samsung's research and development department is appreciated but also individual researchers who can achieve master status and work specifically hard in their field and continue researching in it to drive its progress forward. Samsung clearly states that its successes in the fields of catching-up and its technological progresses can be lead back to these 58 master scientists dedicating their work life to Samsung's ideal of innovation and progress. (Samsung 2016, 131.)

Moreover Samsung does appreciate open source innovation networks and is open to work with external companies which bring in new innovative ideas Samsung could profit from. This system allowed about 900 companies to propose their ideas to the company and 45 were accepted. Another open source network developed by Samsung is ARTIK, a form of Internet of Things platform that allows development of technologies and ideas through outsiders of Samsung whereas Samsung desires specifically the aid of companies working in the Silicon Valley and tries to enter this area of accumulated IT knowledge as well. Another option to improve the internal innovations is the publication of certain patents to be developed further by outsiders. (Samsung 2016, 88, 132-136, 139-140.)

Samsung is keen on improving the manufacturing processes as these kinds of innovations create faster lead times as well as constantly better the quality of the goods. Through development of the automating of processes these goals are also coming closer. However also the development and improvement of already existing products must not stop in favor of supporting only manufacturing processes. In general Samsung has plans to focus on long-term technological advancements to be guaranteed the position of the first-mover. (Samsung 2016, 131-132, 134, 136-137.)

Not only research and development is of importance for Samsung's product development but to sell its goods successfully a nice appealing product design is necessary particularly nowadays with numerous competing products on the market which all offer essentially the same features. Design plays an important role as the special and continuous appearance of a product line or all products in general is the first way to communicate the brand to potential customers. This also includes continuous jingles or sound effects. To create such designs special design centers were established in hip cities such as San Francisco and London, also to specifically design things to please various customers used to fancy designs and who might expect slightly different product designs according

to their region. These centers also collect information and the newest trends and communicate them back to the head quarter to further designs in every location. Also collaborations between Samsung and other design firms as well as fashion brands are in place to maximize the results the company can realize with their product design. The specific designs used by Samsung already were awarded numerous times. (Glowik 2016, 154-155; Lee 2006, 69-74.)

As Samsung wants to surf the next wave of popular technological development it is necessary to start investing in the production of software, not only high quality hardware. To achieve this goal Samsung hires talents in this field from all over the globe, also over the path of collaborating with universities and trying to establish business relationships with enterprises which already have a foot in the industry. (Moon et al. 2013, 81.)

4.6. Example

Samsung researches in the growing topic of cloud computing and connected services. One has to distinguish between public and private cloud options that providers can offer potential clients such as businesses, however also a version made up of public and private cloud services is available. Using a private cloud infrastructure might be cheaper at some point but in the beginning if a company does not need to hold a lot of customer traffic a public cloud service might be sufficient. If clients do not need all the capacities offered by their chosen service, they might even sell these capacities to other parties or consciously share cloud infrastructure with others to save costs. However this tactic seemingly leaves safekeeping and privacy issues of one's data and traffic but if people refrain from using cloud services, researches aiming at facilitating and furthering personalization for clients cannot proceed. A team from Samsung has attempted to solve this problem without diminishing the services of using cloud services via smartphone in the shared context. (Yoon et al. 2016, 49-50.)

Smartphones would be more efficient and provide a better customer experience if connected to a cloud as this connection conserves battery life and provides better internet connection while using one's phone intensely. In a smartphone an autonomous Runtime Adaptation Engine constantly monitors which tactics and ways to compute via clouds are the most battery and system efficient as well as most economic. Clouds also hold autonomous Runtime Adaptation Engines which allow a smartphone entry to the cloud or not if it is too busy at the moment. However the research team uncovered that the majority of clients uses more than one device to go online and if the communication between these used devices were to increase and carried the work load of each other if necessary the cloud would not be as heavily occupied. This could be achieved through the process of Application Component Sharing. (Yoon et al. 2016, 50-52.)

To guarantee the privacy of an ordinary user the data is encrypted when it leaves the smartphone and to avoid a third party to steal the decryption key the data stays encrypted even in the cloud. Through sequence mining, which is still possible as well as interpretation according to the data format of the user the cloud can sent information back to the smartphone where it is decrypted. An alternative is the abstraction of data and answers in the cloud according to assumptions and collected earlier inquires but in this case the answer has a higher chance of not fitting perfectly. (Yoon et al. 2016, 52-54.)

These tactics can be applied to improve proactive suggestion which means that through sequence mining of raw data and the involvement of a concurrence analysis machine raw data can be used to assume the probability of certain things happening. These possibilities are then shared between the cloud, the user and his other devices. (Yoon et al. 2016, 54 -55.)

Another usage is a so-called semantic QA cache. If internet connectivity is bad but the user has a

question the semantics of the question are compared to similar past questions. This also works if the user uses a system of voice input and literally asks the question. If the two or more devices of a user work together for the user's inquiries the quality of the answer improves. (Yoon et al. 2016, 56-57.) Through the task-sharing of more devices the speed of recognizing objects in pictures taken by the user or via voice orders given by the user increases significantly. The recognition of items in pictures or words is conducted through Deep Learning processes of the smartphone which could be transferred to the cloud which leaves the phone and its partner devices with only having to identify the objects based on the information provided by the cloud. (Yoon et al. 2016, 57-58.)

4.7. Problems

As with all industries and companies also the Korean electronics market has its cross to carry and problems with deeper roots as well as new ones arise along the way. These potential problems can be demonstrated by example problems in the past such as insider trading with shares, donation money of questionable origin to support Korean presidential campaigns and fixed price scandals as well as nontransparent monetary movements between family members of the owners. However to resolve the past issues with donations and sponsorships Samsung improved its transparency and included the entire board of directors more tightly in the confirmation processes of allowing donations to external beneficiaries after the huge bribery scandal including the vice chairman Lee Jae-Yong. (Lee 2006, 176-186; Welter 2017, online article; Samsung 2017, 44.)

4.7.1. Work environment and conditions

The Korean labor force in the electronics factories used to be very suppressed in the beginnings of the industry by the companies as well as the government which had no juristic protection for workers' rights, however after uprisings in the 1980s the situation changed for the better as wages rose and unions were allowed to guarantee the workers more rights. Still the factories are not constructed to increase learning processes and knowledge but are hierarchically organized and distinguish heavily between the levels of education a worker has received. This causes segregation particularly once it comes to managerial positions which only higher educated workers are able to secure. The dedication of the work force is also lacking which leads to and is also caused by fast job changes as well as the limited opportunities workers have in climbing the corporate ladder. Quality control is not encouraged and not performed out of own motivation by the workers as own incentives are not rewarded in any way and actually discouraged by the strict hierarchy ruling in the factories. (Kenney 1998, 12-14, 21.) However Samsung tries to change the inequality between workers and sees to it that gender differences and education levels are not influencing the treatments and payments different workers receive. (Chang 2012, 1455.)

Another serious problem arises concerning the situation of the work force in Samsung's production facilities where chemicals are used that are potentially cancerous and could cause numerous other serious diseases without warning or instructing the workers in place about any health issues that might occur and how to protect oneself from these dangerous materials, allegedly to not spill potential company and trade secrets. For the affected workers or their surviving dependents the fight for any kind of compensation shows to be very difficult as Samsung does not offer its reports on chemicals used in the production processes and facility monitoring reports which leaves the families with no actual proof, moreover the state tends to cover the chaebols and there are no laws in place to put the lives of employees over company secrets, although in a few cases compensations were paid nonetheless. An additional issue is that Samsung apparently tries to downplay these incidents, for example through trying to bribe surviving family members to keep quiet about the connection between deadly diseases and chemicals at the workplace. However in the sustainability report for the year 2015 Samsung discusses the issues mentioned above concerning potential cases of leukemia linked with certain production processes and claims to do their best to resolve the

problem with concerned workers through third party mediation. In the report it is mentioned that 110 persons were paid compensations and workers are still able to apply for such compensations. Moreover there are plans and research committees working to prevent further incidents from happening. (Dilger 2016, online article; Samsung 2016, 33; Unknown author 2016, online article.)

Connected issues are the apparent safety problems with Samsung production facilities and the maintenance of research and development facilities that also already cost numerous human lives of employees or contracted workers. These came to the attention of the media as Samsung gained global recognition and economic successes however it must be mentioned that Samsung in comparison to other Korean companies has a below average number of such incidents. Still its number went up radically over the past few years which is attributed to the longer work hours Korean employees have to complete and which might diminish the concentration over time as well as increase the proneness to mistakes. However Samsung argues that it tries to prevent accidents from happening through regular examinations of all facilities since the end of 2014 which are conducted by teams which are aware of cultural differences as well as include at least one more independent member to assure the truth of the reports made afterwards. Since 2016 the results of the reports are furthermore collected online and improvements and developments of sites in question are documented and assessed. Through this system progresses of faults could be established for up to 95 per cent of the problems found on the particular work sites. Through this system apparently the number of accidents could be reduced by over 15 per cent although the number of workers at Samsung did rise. Regular tests of improving the correct actions in cases of emergency are trained regularly. (Souppouris 2014, online article; Samsung 2016, 68-70; Samsung 2017, 74-75.)

A labor union would be sure to help for these kinds of situations and issues, for example in the case of other Korean companies such as Hyundai with similar health and security issues, but again, there are no unions in the Samsung Group, a concept that was forbidden by the Group's founder. However there has been the case of a small union comprised of 1600 people of outsourced Samsung service workers maintaining and repairing broken products from customers who called out on the appalling working hours and low payment they received and whose activities became more public by the suicide of a service worker in 2013. The union was immediately after its founding in 2013 with the help of two other Korean unions under heavy pressure from Samsung management to shut down. To crush the union the conditions became even harsher than before and the constant threat of outsourcing the service center worker's jobs to other firms became real. Moreover did Samsung try to deny the allegations of the workers about their low pay which however could be refuted quite quickly. Samsung likes to outsource work not only for saving costs but also to suppress unions which are anchored in the Korean law, but in outsourcing Samsung has no obligation to protect this right. (Chang 2012, 1450-1451; Glowik 2016, 137; Unknown author 2016, online article; Tillman 2013, online article.)

The constant stress Korean workers and employees are exposed to at work causes their physical and mental health to deteriorate and can even lead to work-related serious health issues as well as suicide attempts or successful acts of suicide. Suicides make up the fourth most likely reason for dying in Korea and work-related stress seems to be the biggest issue for the Korean population out of all possible reasons for feeling stressed, however this does not mean that the people mostly affected by work-related stress are more likely to have suicidal tendencies due to that reason. Samsung tries to prevent such incidents through the establishment of mental health centers and programs on the weekend for employees as well as their families. A healthy work-life balance is promoted as well as the option to solve problems in one's personal life and inter-personal relations in the work place. (Shin et al. 2017, 843, 845-847; Samsung 2016, 49.)

Through Western management thoughts which lead Samsung Electronics the employees and the middle management level cannot be assured that their jobs are safe and that everything is done to

prevent them from losing their work as would have been traditionally the case for countries like Japan. In the case of crisis Samsung employees and managers are let go to prevent further grave losses, receive reduced payments and benefits or if it is seen that the staff does not act well enough on the job and sells enough products. As foreign locations switch regularly if cheaper options are found the job security for employees abroad also appear volatile. (Glowik 2016, 136-137.)

A potential problem dooming in the managerial level of Samsung is the fact that it takes about eight years for an employee to reach a position in the middle management which appears to lead to a deficit of managers in relation to the number of employees. (Chang 2012, 1445.)

4.7.2. Chaebol system

Chaebols are South Korean conglomerates controlled by families which are leading the market and basically own the Korean electronics sector, as the other electronics firms are mostly small and do not hold much influence or market share as well as economic power. The chaebols are moreover heavily preferred by the government and its regulations as such huge companies hold the largest possibility of reaching economic successes and also being technological leaders in their fields. A large network of personal connections is furthermore responsible for the successes and longevity of the chaebols, as are a cross-shareholding system and intra-chaebol trading. Some scholars even claim that the state helped create the chaebols, which most likely developed from the time of Japanese occupation after the image of Japanese zaibatsu. The sheer size and the connectedness of the chaebols allowed them to survive in the harsh climate of early Korean business environment that was neither kind nor cheap. Next to Samsung also the Daewoo, Hyundai and LG chaebols own large parts of the electronics market share. An attribute of the chaebols is that they see to it that every companies' needs for any sector are provided through the chaebol itself and certain fixed vendors, which means interactions between the chaebols are hardly done and not encouraged at all, however even firms inside one and the same chaebol are highly competitive. (Kenney 1998, 3-5; Chang 2012, 1436, 1438, 1440; Kwon 2010, 218, 221.)

As a chaebol wields large power, influences and resources in certain areas it is quite easy for it to expand to new sections if it wants to or sees profits in these fields in the future. This is decided by a central administration which plans augmentation according to future technological developments and possible mass production as to gain economic benefits and make profits as efficient as possible. To be able to carry through such expansion plans the chaebol uses the relatively cheap Korean work force that is however highly educated, a grand value in Korean culture that is also heavily supported by the chaebols. Moreover the already assembled resources and profits the chaebol makes as a whole and which might be supported by the Korean state as well can be reinstalled into new projects as the administration of the conglomerate sees fit. A lot of the fiscal resources go into the research and development sector of a chaebol. (Kenney 1998, 4-6, 12.)

However not all that glitters is gold in the chaebol-dominated Korean market: Of course the influence they hold makes it easy for them to develop and bloom but this success comes at the cost of the small suppliers which deliver the chaebols and from which the majority has only one chaebol as a customer with no possibility of reaching more takers for their products. This of course leads to a continuing dependency and might reduce the research and development abilities the supplier has without any assistance of the chaebol. This mechanism was unconsciously supported by certain state policies which were put in place to boost production and development lead by the chaebols as these were the most promising candidates to develop fast and successfully. However the suppliers made certain mistakes as well such as investing in risky undertakings or not being able to focus on prosperous developments and technological novelties but only drool over potential short-term gains. (Kenney 1998, 6-7, 10.) The suppliers of Samsung Electronics might not be too motivated to be inventive on their own as they have the assurance that Samsung takes their products off their hands

if the quality does not suffer. The system of Samsung to support all its suppliers equally might also induce such a state of comfort. However having discovered the faults in the system Samsung fights against them and tries to introduce innovative firms from outside the company. (Glowik 2016, 148-149.)

Korea's small and medium sized companies and start-ups are not given an easy position on the Korean market as the chaebols demand the most attention and resources. However the small enterprises are usually the most innovative ones and could transform Korea into the knowledge-based economy it aspires to be in the near future. (Hussain 2006, 78.)

Monitoring inside activities is not something particularly serious to the chaebols. Due to the family-centered system small shareholders face difficulties to be heard if they invest in a chaebol. Also foreign shareholders and their outside directors that are supposed to express their interests are apparently in contrast to their job description relatively powerless as they are usually chosen by the heads of a chaebol. As chaebols also have their own financial institutes these can support the internal shareholders and increase their power. Some voices now claim that it might not be necessary to reduce the power of the chaebol but on the contrary increase it as this brings the advantage of lower costs as well as quicker decision making processes. However the accumulation of power apparently does not profit the corporate value at some point as the main shareholders do only follow their own interests not the interest of all shareholders and the company. Moreover the increasing power on the market allows the chaebols to block small and medium size enterprises important for the further introduction of a knowledge-based economy also attempting to enter the same markets the chaebols already occupy. (Kwon 2010, 225-227, 231-233.)

Concerning the work force in Korea so is it very prone to change jobs regularly and quickly once educated and trained enough which has the advantage of diffusing information fast. On the other hand this implies that as the chaebols have the best outlooks to offer on the job market all the talent is swallowed up by these conglomerates and the small and medium-sized enterprises are again lacking innovative well-trained personnel as Samsung's work force is reluctant to change jobs after scoring one in this particular chaebol. However young workers in Korea in general see jobs for foreign firms as most desirable. (Kenney 1998, 9; Hussain 2006, 77, 83.)

Not only South Korea as production site is of interest for the chaebols but they have been investing and expanding their influences already outside of their home country and do not shy away from financing large projects abroad which supports their status as potential leaders in certain divisions worldwide. This course of action implies that the chaebols changed quite a lot to be able to withstand in the globalized world nowadays however although certain changes came to pass the overall conception is that not a lot changed and that the progresses undertaken by the chaebols are not as grand as the owners and reformers inside hoped for it to be. This concerns primarily the seniority system as well as the issues of helping relatives to achieve positions in the higher management. In general studies show that the managerial system of a chaebol is not as efficient as the ones from other kinds of companies so a lot of issues are still in need of improvement. This can also be seen in the cases chaebols try to outsource manufacturing processes or put up factories in foreign countries as the management issues spanning space tend to be complicated to resolve. (Kenney 1998, 6; Chang 2012, 1455-1456; Hussain 2006, 57-59.)

As the chaebols are heavily influenced by the owning families and key positions are most likely occupied by relatives the question has to be asked whether or not this is the best alternative to the common way of finding employees. Are the positions actually occupied by the employees best fitting and accurately educated for doing so? Is it worth the trouble if not if instead the employee in question is absolutely loyal and dedicated to his post and the company? (Chang 2012, 1440-1441; Kwon 2010, 216.)

Other issues are the problems caused by the chaebol. As much money has to go in every sector undertaken by the entire Samsung Group or future projects in fields with relevance in the near future profits have to be shared. Moreover Samsung holds numerous assets which require a constant flow of unvarying expenses. If more of the inputs Samsung has available would flow into Samsung Electronics instead of projects not as successful the entire group would profit. Furthermore is Samsung Electronics the biggest player in the Samsung Group however with the large rivalry in this field there are many similar companies able to offer cheaper products of equal quality and constant research and development is expensive. What speaks for Samsung is that it managed to invest early on in popular sectors such as smartphones and TVs. (Glowik 2016, 144-145; Hussain 2006, 76-77.)

4.7.3. Governmental influences

After the financial crisis in 1997 the Korean government started to heavily change its economy into a more globally oriented and open one through reforming its institutions, which was also required by the times coming to pass indicating a globalization of the international market. The competition on the domestic market from outside economies which began at this time changed Korea forever into a full market economy which was furthermore necessary as Korea has no natural resources to offer as well as due to its small country size only a humble domestic market. Still the influence of the government proved useful, particularly in the earlier stages of Korean development in the 1960s after the Korean war had ended the country had a lot of catching-up to do that would have been unlikely to happen on its own without the state pushing it through institutional reform. Also the political situation contributed to the changing environment as the new authoritarian leader in power beginning in 1961 created an atmosphere of unquestioning compliance. After some time and progress the private business sector had developed and the state started to collaborate heavily with it. Overtime the power of the state became smaller due to the rising power of democracy in South Korea and thus the state control lost its strong grip on the business development, particularly in the private sector. Also the workers demand more rights and protection and as the world watches the state has hardly any chance to repress such developments. It went as far as one can state that actually the government interventions even caused the financial crisis in 1997, for example considering that the state poured money in the chaebols under the impression that they were the leaders of the economic progress. However these started to exploit the protectionism of the state and got into heavy debt, some without at least enhancing their economic performance which caused the crisis in 1997. Another factor was the banking system which was heavily monitored and controlled by the state and borrowed money freely from abroad to further support the demand of the chaebols which caused the banks to lose their foreign exchange reserves. All the decisions made by the government once helping the Korean economy were together causing the crisis at the end of the 1990s; however this crash also showed the state that further reforms were needed to enter the 21. Century as a successful country as one cannot predict the future and decisions once made might change with continuous growth. In this case the institutions and laws supposed to push the economy actually turn out to be blocking the way to improvements. (Kwon 2010, 4-5, 22-29, 58; Kenney 1998, 3.)

After the crisis financial aid of 58 billion US-Dollars of the International Monetary Fund was received under the condition that the market and financial sector was liberated and made open to foreign economies. To avoid monitoring failures as happened in the crisis the banking system became more transparent, also as this process enabled foreigners to use it more securely and easily. However again the state decided per bank what to do and nationalized some which again made them influenceable by the government. The demands of the IMF also included a restructuring of the chaebols through the publication of financial statements as well as allowing foreign capital in the before insular economic sectors and including external directors to share accountability. But again as was the case with banks the reigns of the government never loosened but merely changed. As

mentioned above the workers' laws enforced by the government are not always as effective as desired which causes the work force to protest a lot and clash with the government and not be as productive as possible. The heavy regulations the government implements apparently have their faults and could be improved, in some cases simply by letting the free market take its course and generate a balance on its own. (Kwon 2010, 31-37.)

The government still prefers the chaebol organizations as these are a few chosen companies which lead the Korean economy and future together with the state, not many more players have a say in the developments of South Korea. The state also tends to co-finance research projects for expensive fields with prospective high profits however these primarily support the chaebols. As such a close relation is evident between the state and the chaebols one can conclude that the state also holds enormous influence inside the organization of these conglomerates concerning leadership techniques and internal structuring as the chaebol is likely to be inspired by the system of governmental institutions. However this might lead to inefficiency as such a related system might be enclosing itself to better options that are not even considered in such a dependent system. Attempts to improve the situation of corporate governance by law prove to be difficult: The Koreans are rather traditionalist and do not like to see change, particularly if it reduces their rights and power as company owners. There exists a commission to reform and monitor the faulty activities of businesses however it is not actually an outside force but is under the influence of the government and might be heavily manipulated by chaebols. However since the corruption scandals in 2016 revealing the criminal activities of former president Park Geun-Hye and the Samsung heir-apparent it is very likely that the fight against corruption will be executed harder than before and these two players will be punished severely to demonstrate the new course of action against bribery. This is also connected to the more stable economic situation of South Korea than a few years prior where the leaders of conglomerates also faced criminal charges but were nearly always pardoned. (Kenney 1998, 12; Chang 2012, 1438, 1440; Kwon 2010, 230-231; Banjo 2017, online article; Fifield 2017, online article.)

4.8. Future outlook

Samsung already took great measures to assure its international presence and entry points to numerous markets all over the globe by establishing facilities in every useful region, however it has not yet taken the step to becoming an international conglomerate but it still is captured too much in its own ways, maybe due to its relationship with and also dependence of the Samsung Group. Nonetheless a vital step would be to become even more international and more open-minded to be even more successful. (Moon et al. 2013, 81.)

Another issue could result from the Samsung Groups strict focus and dependence on the electronics sector and the hierarchical structure built around it, as many other future-leading innovations which make up the next step of technological advance such as biotechnology are not being considered properly right now. This could make a long-term survival difficult for Samsung as the focus and financing in electronics might limit its view and options for further research important in the near future. (Wong and Cheong 2014, 381.)

Further stones in Samsung's path are placed there by the family that founded it: The predecessor after Lee Kun-Hee was chosen from the Lee family and was supposed to be his son Lee Jae-Yong, however after allegations of bribery in connection to the former president and other high-ranking officials the freedom of Lee is limited as he will face a prison sentence of a maximum of five years and has already been incarcerated since February 2017. This again raises the question of who will lead the conglomerate into the future and if a leader is even necessary as the company has been doing fine since Lee has lost his freedom. Samsung's case could be an example of a company that

goes well on its own with departments doing their job properly and does not necessarily need a leading entrepreneur to function well and produce high revenues and profits. (Welter 2017, online article; Fifield 2017, online article, Banjo 2017, online article; Ebner 2009, 370-375; Reisman 2004, 74-75, 77-78.)

Other issues are connected to the country which cannot be ignored completely albeit the faith of Samsung Electronics stands in the focus here. Korea still has a lot of development to go through to become equal to Western countries. Its institutions have to be improved, its political situation has still to become more stable and there is much more to be done considering liberalization and releasing the strong grip of the government on the Korean economic market. If the knowledge-based economic situation of the country improved even further, particularly if connected laws became more consistent and the ICT infrastructure was kept at the state of the art and even more public money was spent on basic research Samsung Electronics could also profit from these general improvements. (Kwon 2010, 37-39, 119-120, 122-124.)

5. Comparison and Analysis of Results

After an attempt to offer an overview of both companies to be compared following the before developed indicators I now want to conduct the direct comparison according to: first, the actual numbers taken from the financial reports of both companies from the fiscal year 2016 and later on compare the tactics to success according to the indicators I established in the analytical framework in chapter two.

However of course there are certain other issues that connect the two companies that were not yet mentioned in any detail and which might also have an impact on the economic successes of the respective companies.

Connections between Samsung and Huawei are currently found in a more negative juridical context as the companies are suing each other over intellectual property rights, namely technological features in smartphones. (Lee 2016, online article.)

Samsung has factories in China which are relatively successful compared to other Korean companies in China. This success is assumed to come from Samsung's advanced management techniques and Samsung's meticulous knowledge of the Chinese market. (Hussain 2006, 58-59.)

Another factor that cannot be denied: China is a world power superior to Korea in terms of country size, work force size and resources. This makes it a potential economic threat as these two countries offer similar goods such as intermediate products of average or good quality as well as final products with high competition on the market. However the valuable products and intermediate parts are solely exported by Japan in Asia and South Korea is depended on these products. The only option out is to research and develop more intensively to reach the same level of export materials Japan can offer but China also sees higher research budgets as the best opportunity to develop further and create more high-quality products desired on the global market. This indicates that there will be higher competition between these two countries in the years to come, for customers as well as in the field of research and development progress. (Seong and Popper 2005, xv, xvii-xix, xxvi, 12-16.)

Other obvious differences that are very likely to influence the successes of the firms one way or another are the varying background stories as well as the founding and growth circumstances.

Huawei started to develop in the grassroots and was just a small private company in its beginning. (Tao and Chunbo 2015, 73-74.) However in comparing the origins of Samsung, we can see that the stories appear very similar but the coming-into-being of Samsung Electronics followed only later

and under highly different circumstances as the entrance into this industrial field was mostly bought through high financial efforts by the Samsung Group. Moreover did Huawei never get enlisted but established its employee ownership status over time which offers the firms very different aspects of outside financial options. (Ali et al. 2011, 2881; Kenney 1998, 23; Chang 2012, 1440, 1443; Samsung 2015, 47; Glowik 2016, 133, 145-148; Lee 2006, 10-11, 18-19, 21; Huawei 2017, 99-100.)

Still both companies faced many struggles in reaching the technological level they acquired now and were both not offering high-quality products and services from their beginning as both had first to find their way in the global economy as well as see through the necessary processes of catching-up to fellow companies in their industries. (Luo et al. 2011, 67-70; Tao and Chunbo 2015, xxiii-xxix, xxxiv, 15-16, 27, 36, 57, 61, 63, 144; Fan 2011, 834-835, 837; Ali et al. 2011, 2875, 2879-2880, 2882-2885; Kenney 1998, 18-22; Lee 2006, 22-23, 37.)

As the two firms are engaging in similar businesses they are certainly competitors for the same clients, particularly in the fields of smartphones, telecom equipment, cloud solutions and Internet of Things applications. Interestingly enough recently both enterprises follow the same marketing strategy to sell their newest smartphone devices for up to 1000 Euros which has seldom happened in this field before and was particularly not conducted by these two companies. The tactic they are following is a demonstration of particularly high-quality gadgets as well as high-class smartphones to improve their reputation of their companies as fancy smartphone sellers like Apple. (Unknown author 2017, online article.)

5.1. Economic successes

In this chapter I first want to conduct a demonstration of the obvious differences of some chosen economic factors in concrete numbers. The data was taken from the annual company reports published by Huawei and Samsung Electronics. These include financial reports which the companies have to publish and which can be examined by the public and the stakeholders of the particular companies.

Numbers in Thousands US-\$	Huawei	Samsung Electronics
Revenues 2016	75,103,000	174,047,940
Net profits 2016	5,335,000	19,594,260
Current assets 2016	63,880,000	26,044,667
Current total liabilities 2016	46,571,705	59,673,438
Total equity 2016	20,178,000	166,371,229
Employees 2016	180,000	308,745
Facilities 2016	?	220

(Huawei 2017, 8, 19, 50-52, 58, 77; Samsung 2017, 8-9, 110-114; Huawei 2017 A, 10; The Money Converter, webpage (for the value of Huawei's liabilities in US-Dollars, 12.9.2017).)

Illustration 2: Comparison of economic variables

As one can see from the table where Huawei's and Samsung Electronic's financial indicators are compared directly in US-Dollars with the exchange rate from their respective currencies of the end of 2016 the apparent economic successes differ greatly. The firms' revenues for the business year 2016 show that Samsung clearly made more than double the revenue Huawei made. In net profits Samsung managed to make nearly four times the profit Huawei managed to produce. Due to the higher revenue it is clear that the profits of Samsung have to be higher than Huawei's. The values of current assets the companies hold show that Huawei has significantly more assets than Samsung. Considering the liabilities so can be stated that Samsung holds slightly more liabilities than Huawei. In equities Samsung has much higher commitments than Huawei, most likely due to being listed at

the stock exchange. Employee numbers are significantly higher for Samsung Electronics. As a conclusion of this illustration one can see that Samsung generates more revenues and profits than Huawei but holds less assets and more liabilities and equity than the Chinese firm. It furthermore has to have higher expenditures considering the large amount of staff. Unfortunately it is unclear how many facilities Huawei has to uphold, however the firm is active in 170 countries and most likely also holds at least as many facilities. Samsung however holds about 220 facilities worldwide. (Huawei 2017, 8, 19, 42-43, 50-52, 58, 77; Samsung 2017, 8-9, 110-114; Huawei 2017 A, 5, 10; The Money Converter, webpage (for the value of Huawei's liabilities in US-Dollars, 12.9.2017); Huawei 2017 B, homepage.)

In general the numbers from these financial indicators were rising constantly over the past three years for Huawei, only the net profits stagnated for the last two years. In the case of Samsung Electronics so is the revenue slightly on decline: it used to be higher in 2014, fell in 2015 and rose again slightly in 2016 but stayed under the value of 2014, same with the net profits of these years. This indicates that the comparison between the two companies is relatively equal for the past three years. (Huawei 2017, 8, 19, 50-52, 58, 77; Samsung 2015, 40-42, 77, 79; Samsung 2016, 10, 199-204; Samsung 2017, 110-114.)

Huawei focuses very specifically on the self-portrayal that it wants to connect the entire world and bring telecommunication equipment to every secluded region of the planet to offer the joys and advantages of constant affordable connectivity to every single person. They also emphasize their own willingness in risking all their efforts to establish telecom connections in risky areas such as regions touched by natural and manmade disasters to provide faster aid and communication in emergencies. The consumers are the main focus of Huawei's strategy and everything the company does and innovates is supposed to improve the usability and comfort of the consumers. The second focus is the entire telecom industry that Huawei wants to support as a whole. The networks provided by Huawei are designed to be safe, private and easy to use. This company strategy can be interpreted as not very profit-orientated, as for the work in low-income and developing countries demanded prices cannot be high. As the company actually has the goal of delivering every person internet access and although Huawei is also present in high-income markets, more efforts are necessary to establish infrastructure in developing countries. (Huawei 2017 A, 4-6, 10-11, 15, 17, 66-69.)

Samsung markets itself according to its company slogan: *"To devote our human resources and technology to create superior products and services, thereby contributing to a greater global society."* (Quote, Samsung 2016, 8.) This indicates certain things: on the one hand that the company does not cease to improve its products and services until they are state of the art or above; on the other hand that these efforts are taken to guarantee and contribute to an improvement of the life of every citizen on earth. This shows a customer-centrist ideology as well as one of lived corporate responsibility. However with its worldwide electronics market Samsung can vary prices and qualities of products and services according to region and customers. Due to its field it is easier for Samsung to produce higher revenues and higher profits than for Huawei. (Lee 2006, 17-18.)

5.2. Indicators

Now a direct comparison of the two companies according to the indicators will follow. This is supposed to demonstrate the different strategies the companies apply as well as the different successes and methods that can be found.

5.2.1. Innovation tactics and productivity growth

Considering the human resources aspect of Huawei so is it keen on suggesting employees their tasks and work ethics such as the farsightedness of the upper managers and the acting as role

models of the lower management which also is supposed to be inspiring to the grass-root workers. A hierarchical order exists but allows suggestions which are particularly desired from the managers as creative thinking is encouraged by the company. It is seen to it that the remuneration, career opportunities and work atmosphere are satisfying to keep trained employees at Huawei and avoid heavy staff fluctuation. (Tao and Chunbo 2015, 47-48, 80-81, 96-97, 107-111, 144, 213, 120-121; Huawei 2017 B, homepage; Huawei 2017 A, 20.)

Samsung's management concepts on the contrary are derived from Confucianism and Western theories which turn out to be quite militaristic and as such strictly hierarchical. Seniority principle is still very relevant in the Samsung management structure. Before the economic crisis and the heavier competition through the globalized market the employees had life-long job security. Nowadays this is not the case anymore and in times of restructuring and a new generation of Korean workers certain measures of the past cannot be employed as strictly anymore. Job security is volatile and cannot be guaranteed however through further education options and other reimbursements as well as after-work activities and the option to work part-time or from home employees are encouraged to stay in the company once they were trained. Also the methods of promoting employees seem to be fair as these candidates are chosen through yearly evaluation processes. If employees are not satisfied with their current position they also have the possibility to change jobs in the company. (Glowik 2016, 133-135; Chang 2012, 1438-1439, 1441-1447, 1452; Samsung 2016, 40-48.)

The employees at Huawei have ways of voicing their disagreement with the company and these complaints are collected and considered. Huawei also offers internal online forums and organizations inside the firm whose task is to find possible disadvantages for the employees. (Tao and Chunbo 2015, 47-48, 80-81, 96-97, 107-109, 213; Huawei 2017 A, 13-14.)

The employees of Samsung also have the possibility of complaining about any situation through numerous channels and also complain further if they are of the opinion that their complaint was not resolved as desired. Work councils furthermore protect the rights of Samsung's workers. (Samsung 2016, 75-76.)

Huawei employees are the only ones able to hold company shares which is a concept not often seen in this particular field but it seems quite innovative. This furthermore gives the employees control over how the company will develop. Even if the employee does not hold shares, they still earn a salary and have the options of reaching bonuses and are extensively insured. (Tao and Chunbo 2015, 44-47, 85, 180-181; Huawei 2017, 99-100; Huawei 2017 B, homepage; Huawei 2017 A, 34.)

Samsung Electronics on the other hand is enlisted and as such has to fusion the interests of the company owners as well as other shareholders that own pieces of the firm. However apparently the Samsung Group holds most parts of the company itself through intern ownerships between the subsidiaries which all own parts of each other. (Chang 2012, 1440-1441, 1444; Samsung 2016, 6, 22-23; Lee et al. 2015, 2; Glowik 2016, 134-135, 140-144; Lee 2006, 23.) Still it is seen to it that the employees at the company are also reimbursed properly and are insured extensively. (Samsung 2016, 41-42, 48.)

Huawei's employees are constantly motivated to educate themselves and are urged to improve themselves and the company which is conducted through trainings and e-learning options. This is part of the company's philosophy of always changing and improving itself to be able to withstand the equal changes of the market and the volatile demands of the industry. (Tao and Chunbo 2015, 27-28, 61-65, 69, 103; Huawei 2017 B, homepage; Huawei 2017 A, 32-33; Luo et al. 2011, 69.)

Samsung is of the same opinion: Improvement and learning are an essential part of what keeps a company alive in the fast-paced globalized world nowadays. Particularly the employees have to become more and more skilled but also need to learn a certain independence and creativity to push the company forward. This is mostly trained in in-house facilities. Samsung considers the fields of marketing, research and sales to be particularly worth improving and wants to engage and breed experts which are particularly skilled in these sectors. (Chang 2012, 1449-1450, 1454; Samsung

2016, 47.)

In contrast to the hiring ethics of Samsung Huawei does not appear to be too prone on hiring the relatives of managers or the upper echelon; however the ownership system is also quite different and does not encourage such manners. The employees have to sign a business conduct clause stating that they obey the anti-corruption and bribery regulations of the company which are furthermore recalled by the employees every year through a test. (Huawei 2017 B, homepage; Tao and Chunbo 2015, 120-121; Huawei 2017 A, 20, 30.) Huawei is also keen on helping to improve education and established a university for that reason. (Tao and Chunbo 2015, 119.)

Samsung claims that application processes for future employees are not prejudiced in any way however other voices state that personal relations with people already employed at Samsung might help tremendously at gaining a job there as well. (Samsung 2016, 41-42, 48; Chang 2012, 1440-1441.) Still Samsung also recruits young talents from Korean or foreign universities as well as already at high schools through, for example programming classes which are supposed to encourage pupils to enter lines of work that Samsung could recruit and profit from. (Chang 2012, 1445; Samsung 2016, 114-115, 117; Hussain 2006, 91.)

Self-criticism is a factor the company Huawei and the managers are following quite radically as the company philosophy states that only through thorough rethinking and questioning one's own actions progress can be made. This includes self-critical managers who are able to admit to mistakes. This shows that the managers are supposed to actually invest into the company by putting themselves back. The company is of the opinion that this tactic contributed to the firm's success. Another company value is the one of compromise which is seen as useful as this ability is used in everyday business life and gets the company if not to its goal so at least a step closer.

(Tao and Chunbo 2015, 66-67, 79, 87-88, 90-92, 95, 129-133, 135-136, 138-141, 145-151, 154-155.) Samsung also tries to hold good stakeholder connections to all possible parties involved and interested in the company which facilitates cooperation and communication. However there was not any mention to be found about the internal management tactic of public self-criticism. (Samsung 2016, 32-33; Samsung 2017, 5, 24.)

Huawei leads a customer-centrist marketing strategy. The customer is king and can personalize as much as possible if they desire to. If problems occur with any services or devices an employee of Huawei is available to solve the issue immediately. A tactic surely appreciated by customers. (Tao and Chunbo 2015, xxxi, 2-5, 15-17, 32-35, 48; Luo et al. 2011, 69; Huawei 2017 A, 10-11.)

Samsung also recognized the customers as one of the most important forces of the market nowadays and wants to please them. The high quality of the products already assured through the manufacturing processes is supposed to avoid many problems customers could have from the beginning, however if a product or service seems amiss the customers have numerous ways to get in touch with the firm and be supported through personnel, including special features according to customers' needs or their specific region. (Ali et al. 2011, 2886; Lee et al. 2015, 4; Samsung 2016, 104-107, 138-139; Samsung 2017, 54.)

Huawei and its leader Ren Zhengfei constantly had a plan on how far to expand and how much was possible for the company at every stage of its development. Huawei does not try to take over the entire telecom market as such an endeavor would be too risky and most likely fail; also the company did not enter completely new markets but stuck to what it knows and is good at which paid off well. Now it is also keen on starting collaborations with fellow companies to improve its possibilities in the development of the technology and the market. However there are major goals which are supposed to be realized and which no small achievements or trends can shake. This demonstrates the firmness and long-term determination of Huawei and its leadership. A system of checks and balances furthermore guarantees that no hastened decisions are taken which steer the company plans completely off course. (Tao and Chunbo 2015, xxxii-xxxiii, 18-19, 80, 103, 118,

193-194, 197-201, 204-212, 219-224; Luo et al. 2011, 69; Huawei 2017 B, homepage; Huawei 2017 A, 22-23.)

Samsung has a risk assessment plan that is constantly updated according to regions and changing market situations which is supposed to assure minimal risks and the company survival and growth. It also aspires growing cooperation with other firms in the industry and keeps an eye on interesting start-ups to potentially buy the rights for innovative technologies. Samsung as a Group conglomerate that is led by a family invests also in other sectors which might not always be fiscally rewarding and such investment failures can be difficult to remove from the entire company scheme and waste money. (Samsung 2016, 24, 87-88, 132-133; Ali et al. 2011, 2887; Glowik 2016, 137-138; Hussain 2006, 80-81.)

As we can see holds Huawei a specific company philosophy that covers many aspects of the future developments of the firm. Samsung has a code of conduct that tends to not be as philosophical as Huawei's. It focuses more on broader and general factors such as compliance to laws and the protection of the environment as well as the integration of all stakeholders. (Samsung 2016, 185-196; Tao and Chunbo 2015, xxx-xxxii, 24-25, 51.)

Huawei spends a lot on marketing as this field is taking up first contact with potential customers and draws them into buying Huawei products for the first time. (Zhang 2013, 1-6.)

As one of the key points nowadays marketing is a factor of great importance for Samsung as well. The company spends a lot of money to market its products and also sponsors sportive events as well as on product placements in movie franchises to gain new customers. Samsung's innovative appearance and e-services make the products again more attractive to consumers. (Glowik 2016, 151-154; Lee 2006, 12, 29, 44, 60-68, 76-77; Atashfaraz and Abadi 2016, 327-334.)

Nowadays Huawei sees to it that the products and manufacturing processes are on the highest level, including the company supplying firms. To avoid accidents high levels of work security and maintenance are upheld. If suppliers cannot guarantee these standards they are supported by Huawei to learn how to do so. Safety measures do not only apply to production processes, products and employees but also to the safety of the data of the clients and the company. To transform into a green company Huawei rejects the usage of dubious raw materials. (Zhang 2013, 4; Huawei 2017 B, homepage; Huawei 2017, 44-47, 113-119; Huawei 2017 A, 18, 38-45, 47-51, 54-60, 62-63.)

Samsung demands that its supplying companies hold up to high product standards and it also created a meticulous system to safe production costs by calculating carefully which and how many products are needed. If necessary the suppliers are also aided by Samsung to improve their overall quality and controls are performed frequently. These measures are conducted to guarantee the safety of the products offered as well as to improve the quality even further. Data security is an issue also relevant to Samsung as the firm offers online payment options. Samsung furthermore tries to improve the life situations of potential miners in poor areas as well as drives a strict course to avoid critical raw material harvested under negative circumstances. Such measures however are standard nowadays in conglomerates all over the world. (Lee et al. 2015, 3-8; Samsung 2016, 25-29, 35-36, 53-63, 83, 85-88, 90, 93-104; Samsung 2017, 42-43.)

Huawei appears as an innovative company with a huge research and development budget and emphasis on research however it does not strive desperately for innovations but wants to use future technologies to improve the customer experience through Huawei products and guarantee the customers a level of technology also offered through competitors. This appears as a tactic of playing it safe and going with the masses. (Tao and Chunbo 2015, 169, 235-237; Huawei 2017, 14-15.)

Samsung on the other hand presents itself as an innovative company that tries to enter further into future technologies and collaborates with similar firms to achieve this goal. It moreover buys small start-ups or small and medium-sized companies which might harbor useful ideas it can market using its larger marketing budget and research budget or can even incorporate in the Samsung Group as a

whole. The employees of the firm are also encouraged to be inventive on their own as projects can be demonstrated in competitions and if useful might be adapted into the company portfolio. Samsung is also a market leader and Korean companies are very likely to copy Samsung's behavior and development. In contrast to Huawei Samsung appears more daring; however as a chaebol Samsung can afford more failures. (Ali et al. 2011, 2885-2887; Glowik 2016, 137-138; Chang 2012, 1453-1454; Lee 2006, 63; Samsung 2016, 9, 124-130, 132-133, 138.)

5.2.2. Entrepreneurial aspect

Ren Zhengfei the founder of Huawei is an entrepreneur coming apparently straight from Schumpeter's theory. He founded the company in difficult times and did not finance it on his own but with partners. He also was no great inventor with a specific technological device he wanted to market himself but acted as an imitator who gradually improved already existing technology but under great risks whether his plan would work or not. However considering this information Ren is not an entirely classic entrepreneur as he was not a first-mover but an imitator albeit a very successful one. His personality traits as an entrepreneur are still intact as he has a leadership personality and holds a high position in the company which is of great personal importance to him. He is very involved in management development and in establishing a company philosophy reaching for a sustainable future in such a highly competitive field. Interestingly enough Ren also plans ahead for the time he himself will not be able to lead the company anymore and established a system to ensure the survival and prosperity nonetheless. Ren only holds 1.4 per cent of the company shares whereas the other shares are spread under the employees making Huawei an employee-owned private firm. The shareholders, in this case the employees at Huawei can choose the board of directors representing their interests which indicates that Ren himself cannot hold that much decisive power in the firm however in reality he still does and some even see him as a Chinese version of Steven Jobs as he is the primary force behind the company and its never-ending improvements. Although he holds power in the firm Ren does not intend to enrich himself or others uncontrolled through profits the firm produces which is one of the reasons he does not want to offer company shares to the public and also to not be forced to include outside interests into the company planning. (Huawei 2017 A, 13-14; Tao and Chunbo 2015, xxi-xxv, xxx-xxxii, xxxv, 2-3, 12-13, 16, 21-24, 27-28, 44-50, 61-62, 71, 85, 94-97, 111, 114, 132, 160, 168-169, 180-181, 189, 197; Huawei 2017, 99-100, 104; Schumpeter 1939, 240-246; Maxwell 2009, 41.)

Samsung on the contrary is firmly in the control of the Lee family and has been since its founding. Lee Byung-Chull created the Samsung Group in 1938 and Samsung Electronics was founded in 1969. The founder built the company up from scratch with little seed money, however at the time Samsung Electronics was created the company had already established satisfying profits. Without them the setting up of Samsung Electronics would not have been possible as a large monetary investment was necessary to enter this technological field. Considering these factors Lee Byung-Chull can certainly be seen as an entrepreneur, who later expanded his business into a prosperous and future-oriented sector, namely the electronics industry. His son Lee Kun-Hee followed his footsteps after his death and turned Samsung Electronics into the huge and successful company it is today. Parallels can be found in comparing it to Huawei as Samsung also started with copying already existing products to a small price and in minor quality at first, before making a breakthrough with a more advanced product that was acquired under large monetary and scientific efforts. After the founder his son Lee Kun-Hee took over the empire and now also passed it on to his son Lee Jae-Yong after a grave deterioration in health. Lee Kun-Hee can also be considered an entrepreneur same as his father considering that these two men did their best to improve the Samsung Group and created its main draft horse: Samsung Electronics. Lee Jae-Yong however was not a leader long enough to make a real impact on the firm. Apparently he never was such an involved chairman as were his father and grandfather which makes his position obsolete and demonstrates Schumpeter's theory of a conglomerate leading itself if all the divisions are established enough to do so. Still even if the Lee family is not personally heavily involved in the

company they do own the majority of it and as major shareholders could enforce huge decisions. (Kenney 1998, 18-23; Chang 2012, 1440, 1443; Samsung 2015, 47; Glowik 2016, 133-135, 140-148; Lee 2006, 10-11, 18-19, 21-23, 37, 174-175; Ali et al. 2011, 2875, 2879-2885; Fan 2011, 837; Schumpeter 1939, 240-246; Hussain 2006, 97; Welter 2017, online article; Samsung 2017, 20; Fifield 2017, online article; Banjo 2017, online article; Reisman 2004, 74-78; Chang 2012, 1444; Lee et al. 2015, 2.)

Ren aspires to create a market in which the competitive companies of the telecom field work together to achieve better customer services and more advanced products. However he does not try to deny that the competition is enormous and sees it also as a threat that if Huawei shows signs of fatigue or weakness will take over its clients, customers and revenues. Nonetheless Ren does not see Huawei's future in dominating the market but as still existing on the future market, particularly in times of recession and potential crisis. He is furthermore concerned with the involvement of the state of the market and instead of restrictions would rather propose incentives for innovative firms or foreign companies. Ren is moreover for a strict separation between Huawei business and Chinese politics and strongly advises employees against joining politics if they want to keep their positions in the firm. As of the field of telecommunication Ren is afraid that there will not be much more discoveries and improvements to the equipment made in the near future which concerns him. All these depressing outlooks are realistic but also force the company to stay innovative and flexible for what is still to come. (Tao and Chunbo 2015, xxxiii-xxxiv, 20, 26-27, 31, 37-43, 48, 70, 191-192, 224-226; Luo et al. 2011, 70; Huawei 2017, 48.)

Lee Kun-Hee created a large part of the company philosophy which was heavily derived from sports theory as it exists nowadays and he was also concerned with the situation of the South Korean economy as a whole and what it meant for the future development of the country. He was a model chairman taking care of the company and being present to demonstrate work morals to his employees. Furthermore was it him who introduced change and reform into the company to improve particularly the human resource management further. Moreover did he have the ability to see into the future and predict heavy competition coming from China quite early. To improve the general sense of urgency and pressure to perform Lee created a scenario of high competition and necessity to improve even in times of prosperity and well-being. As a perfectionist Lee carefully considered every option before making decisions which enabled him to create the company Samsung is today. (Chang 2012, 1451-1452; Lee et al. 2015, 7; Samsung 2016, 5, 23; Lee 2006, 34-37, 42-47, 52; Welter 2017, online article; Fifield 2017, online article.)

However as an enlisted company Samsung's chairman has to not only see to it that the company keeps running as profitable as possible but also to maximize the shareholder-value of the numerous shareholders involved in Samsung. A further relevant stakeholder is the state which also holds influence over the chaebols. (Chang 2012, 1440-1441; Samsung 2016, 6, 22-23.)

Huawei does have labor unions however some people claim that these institutions are not looking out for the workers and their rights very well. The company is employee-owned and as such the employees who hold shares can decide on major decisions. As apparently nearly half of all employees own parts of the company they might be able to actually see to it that their legal rights are not completely disregarded. (Tao and Chunbo 2015, 44-47, 85, 180-181; Huawei 2017, 99-100; China Labor Bulletin 2007, 3, 49-50; Huawei 2017 B, homepage.)

Samsung on the other hand is enlisted and in control of a family which means that a lot of interests struggle for influence. However the workers do not have a union supporting them and their rights which can be a heavy disadvantage and not having a union is not very timely. (Chang 2012, 1450-1451.)

Ren holds a customer-centrist philosophy which he attempts to improve through fitting human resource management with particular focus on the sales and marketing personnel. Also cooperation with other companies is a popular way of improving one's contacts and target markets. However to

upgrade the management system and the efficiency of the departments reforms where in order and the entire company was at times reorganized quite radically but gradually and systematically which allowed a healthy new work environment to form. A necessity that helped the company become what it is today. (Tao and Chunbo 2015, 20, 26-27, 32-41, 43, 50, 70, 152, 157, 160-165, 167-169, 182, 184-185, 191-192; Zhang 2013, 1-4, 6.)

Samsung conducted other projects to improve and grow, such as the usage of clustering in Korea as well as the cooperation with joint ventures. Samsung also tries to gain advantages from the work force of developing countries as well as from the expertise of developed countries. However, also numerous internal reforms were conducted to improve the human resource management. (Moon et al. 2013, 79-82; Chang 2012, 1451-1452; Lee et al. 2015, 7; Samsung 2016, 5, 23; Lee 2006, 34-37, 47, 52.)

New issues which have to be implemented if companies attempt to be successful in the West and want to succeed are the compliance to preserve the environment and act ecologically thoughtful in every way possible. Next to the environment also workers' rights are being obeyed as are intellectual property rights and human rights. Huawei supports development work in poor countries and takes on its corporate responsibility by establishing training centers for IT education and supporting communities in need all over the globe. (Huawei 2017 B, homepage; Huawei 2017 A, 18, 28-30, 36-37, 42-46, 50-51, 57-60, 67, 69, 71, 78-87.)

Samsung also takes on the factor of corporate responsibility by supporting and improving the lives of people not necessarily connected to Samsung Electronics through school projects and development undertakings. Other factors important to Samsung are recycling and using recyclable materials as well as reducing energy used for production and protecting the environment through any means possible. Samsung furthermore publicly condemns bribery and unlawful acts as well as issues not fitting with Samsung's compliance rules. The compliance with human rights is another issue taken seriously by Samsung. Such procedures and declarations are however standard nowadays for huge companies. (Samsung 2016, 6-7, 31, 53-68, 71-74, 78, 108-113, 116, 118-123, 142-157, 161-164, 166-174.)

5.2.3. Competitors and Competition

In general the Chinese state is a large competitor to private companies, particularly in certain fields declared as non-enterable by private companies. However the telecommunication sector is not one of these fields but is actually supported by the government, no matter whether the firms supplying it are public or private. As long as the companies have a good reputation which they spread abroad the Chinese state is happy to support and advertise them. This was not always the case; in the founding times of the company the state still undermined private Chinese companies however apparently this situation has changed a lot in the past few years. Rumors claim that Huawei collaborates with the Chinese military and receives payments from it however the company denies such rumors. Next to the state and global competition also the other telecom companies in China are a factor of competition. (Coase and Wang 2013, 136-145, 169; Foster and Reinsch 2010, 302; Luo et al. 2011, 69; Tao and Chunbo 2015, xxxiv, 58-59, 78-79; Huang 2008, 11; Defraigne 2013, 38.)

Considering the situation of Samsung and the Korean market so are other chaebols a large competitive force as these huge companies primarily share the Korean market. An advantage of Samsung is that the competitive firms in some cases buy basic products from Samsung to ensemble their final goods. These final products are still competition for Samsung's final goods but at least the intermediate products of Samsung go well in any case. An issue with the Samsung Group is that companies and subsidiaries belonging to the Group might be competitors as well. Also other electronics companies in the country as well as foreign firms are competition. (Kenney 1998, 4-5; Glowik 2016, 150; Gnyawali and Park 2011, 657-658; Samsung 2015, 70-75.)

Competitors use Huawei's relatively nontransparent company policy and shyness of the media to

refuse it access to foreign markets or to new business opportunities or collaborations which happened in the United States. Therefore Huawei has established the company policy that collaboration is highly appreciated but that in the end one has to achieve everything through one's own power. (Tao and Chunbo 2015, 35-36, 59-60, 73-74, 76, 80-81, 189-190, 192, 208-209, Luo et al. 2011, 70.)

Although Samsung is not very transparent as well it apparently does not deal with that much resistance from the American market than any other foreign competitor. (Moon et al. 2013, 81.)

As competition is fierce, marketing is one of the most important things a company has to conduct to assure a steady stream of new customers. This includes marketing campaigns targeting specific persons depending on their region and life situation. (Zhang 2013, 6-8.)

Samsung also considers marketing as particularly important to outrival competition and to reach new and old customers. (Glowik 2016, 151-154; Lee 2006, 12, 29, 44, 60-68, 76-77.)

Huawei has a company philosophy of collaboration and improving the telecom market for everyone involved, particularly the customers. To provide the best service and products possible the firm considers working together as the best option. Huawei is keen on researching together with firms from the telecom sector, improving the market condition for everyone and also desires input through for example open source networks. (Tao and Chunbo 2015, 18, 37, 86, 104, 128; Luo et al. 2011, 70-71; Fan 2011, 838; Huawei 2017 B, homepage; Huawei 2017, 48-49.)

As Samsung occupies a large part of the Korean market as do other chaebols small and medium sized enterprises have a hard time on Korean soil. To improve this situation Samsung offers support to such small companies. This support appears in the form of mostly fiscal aid through collaborations with banks and financial institutes close to the Samsung Group and also in cooperation with the Korean government. Samsung also tends to try to improve its supplying companies which could also transform them into competition in the long run. Other help Samsung provides are collaboration centers where smaller companies can improve through the corporate organization and management Samsung conducts as well as company-internal patents which are published and can be used by anyone. Like Huawei Samsung also likes to enter cooperations with companies that are also active in the same fields which makes them competitors as well as collaborators, to the advantage of both however. (Samsung 2016, 89-92; Gnyawali and Park 2011, 651-658.)

Apparently Huawei's biggest competitor is Ericsson, however in China the public company ZTE is the largest competition. (Tao and Chunbo 2015, xxvi-xxviii, 8, 73; Fan 2011, 835-837.)

Samsung's biggest competitor in the smartphone field is the strongly desired iPhone from Apple, however on the Korean market as another Korean company LG is Samsung's strongest opponent but Samsung managed to enter some cooperations with LG which both companies profited from. (Lee et al. 2015, 2-3; Glowik 2016, 137-139, 144-145; Lee 2006, 21.)

5.2.4. Imitator tactics

Chinese companies are particularly accused of never producing anything original on their own but only copying products of other, more innovative firms. This is mostly connected to the fact that smaller enterprises do not have much revenue to spend on research and development which would be necessary to create own innovations. (Tao and Chunbo 2015, 236.)

In Huawei's case the biggest step of imitation is the adaptive spirit to change with changing circumstances, to become more flexible and able to recognize and seize new opportunities. In Huawei's beginning this was primarily undertaken through imitating the corporate structures and human resource management of American firms as these were market leaders at the time and deemed a good opportunity for Huawei to push forward fast and successfully. At some point

however the pure imitation was not enough and Huawei actively asked and paid for help and advice from American companies. (Zhang 2013, 8; Huang 2008, 11; Tao and Chunbo 2015, 55-57.)

In its early stages Samsung was not innovative on its own but focused on catching up to a more developed level fast. To achieve this goal the company was not particularly careful as to which source it used to gain technology and necessary information. This led to numerous juridical conflicts and IP infringements which could only be resolved in the court room or through amicable arrangements. In the sector of marketing, designing and creating a brand with value Samsung had to make demands on other firms more advanced in these fields. Still today Samsung is involved in litigations however this is the case for many companies in these sectors. (Kenney 1998, 21-22; Samsung 2015, 82; Wiebe 2013, 219.)

Nowadays Huawei as a customer-focused company looks primarily for what the customers want and are most likely to purchase. These products are then improved and accompanied by human resource aid in form of services even though the main idea might not have been developed by Huawei itself. This demonstrates that Huawei is indeed an imitator according to Schumpeter albeit also holding entrepreneurial features. However this should be a general truth for many contesters in the telecom industry or any industry for that matter. (Tao and Chunbo 2015, 197-198; Korres et al. 2003, 293; Fagerberg 2005, 15; Rosenberg 2000, 69-71.)

Samsung follows the tactic of staying an imitator as well. Other already launched products are watched carefully and what is deemed successful is also overtaken by Samsung. (Glowik 2016, 156.)

The factor and issue of imitating products of other companies can of course be bypassed by initiating collaborations with firms which offer desirable products. This is a tactic undertaken by the majority of companies in this field, including Huawei. (Tao and Chunbo 2015, 65.)

Samsung also used the tactic of hiring employees from competitors to gain inside information and technology from the field. (Kenney 1998, 22.)

5.2.5. Company intern and external research

	Huawei	Samsung Electronics
Employees in R&D 2016	80,000	62,546
R&D facilities 2016	15 centers, 36 joint innovation centers	34
R&D investment 2016	CNY 76,391 million/ 11,690 million US-Dollar	KRW 14,8 trillion/ 13,120 million US-Dollar
International patents filings 2015 via the Patent Cooperation Treaty System	3898	1683
Patents registered globally as of the end of 2015	50,377	110,145

(Samsung 2017, 9, 34; Huawei 2017, 42-43, 50; Huawei 2017 A, 5; Huawei 2016, 42; The Money Converter, webpage 12.9.2017; World Intellectual Property Organization 2016, 16-17; Samsung 2016, 130.)

Illustration 3: Comparison of R&D indicators

Huawei employs about 80000 persons in its research and development facilitates with a budget of at least 10 per cent of the company's revenue. Due to the Chinese labor market Huawei can employ talented Chinese scientist for relatively low salaries. However despite the efforts of the company through gifted work force and high budget Huawei has not yet managed to create a ground-breaking innovation. The company focuses more on improving already existing gadgets which it obtained through licenses and royalties. (Huawei 2017, 42-43, 50; Huawei 2017 A, 5; Tao and Chunbo 2015, 66-67, 236; Foster and Reinsch 2010, 301; Luo et al. 2011, 68, 70; Huawei 2017 B, homepage.)

Samsung employs over 62000 persons in its 34 connected research facilities. The research departments receive nearly 15 trillion KRW. The firm not only wants to develop new innovative gadgets but also seeks to reduce lead times through better machinery and constantly improve the quality of its applied materials and final products. Samsung Electronics is hunting for the possibility to be a first-mover in its field through one new innovation. Moon is of the opinion that to succeed in the fields of electronics a stronger development of software has to be conducted by Samsung. The enterprise attempts this development through employing experts and creating collaborations with companies more advanced in this subject. (Ali et al. 2011, 2885; Kenney 1998, 12; Chang 2012, 1443, 1449; Samsung 2015, 76; Samsung 2016, 11, 125, 131-132, 134, 136-137; Samsung 2017, 9, 34; Moon et al. 2013, 81.)

South Korea received over 33000 US-Dollars for its registered patents in 2013, in comparison to China where one patent is only worth approximately 6500 US-Dollars. This different value indicates that Chinese patents might not have the same quality as Korean ones. Considering the different numbers of patents registered after the Patent Cooperation Treaty System so can this be explained by the particular liking of Huawei and Chinese firms in general to register their patents via this particular system. The PCT system has the advantage of protecting one patent in numerous countries at once with just a single registration. In the year 2015 Huawei was the number one company of having registered patents via the PCT system. (Defraigne 2013, 43; Godinho and Ferreira 2013, 1046, 1048-1050; World Intellectual Property Organization 2016, 16-17.) On the other hand Samsung Electronics particularly favors the US Patent and Trade Office and holds the second most patents in the US since the year 2006. The different numbers of patents registered in total as of 2015 can be explained by the longer existence of Samsung Electronics and the only recent efforts of Huawei to register more patents. (Samsung 2016, 125, 130; Huawei 2016, 42.)

Huawei holds numerous research facilities outside of China which gives the company the advantage of being able to survey the foreign market more easily and creating products and advertisements focused on the target market. Foreign personnel that is employed in these facilities also offers insight into the new market and can be helpful to enter it more successfully. (Fan 2011, 833-834, 838.)

Special research facilities enable Huawei to allow customers to test products which helps the company establish how products have to be for customers to crave them. (Zhang 2013, 3-4, Tao and Chunbo 2015, 69.)

Like Huawei Samsung also established centers abroad, however specifically for design inspirations and help as the company lacked abilities to provide such services satisfactory on its own. This also aids with entering potential foreign markets and communicates different product expectations back to Samsung headquarters. (Glowik 2016, 154-155; Lee 2006, 69-74.)

Samsung recently established a new research campus which is supposed to enable Samsung engineers and scientists to create more innovations faster and easier as it also includes features to improve the life quality of the there employed personnel. (Samsung 2016, 46.)

Other ways of improving their research and development successes are conducted by individuals who are master scientists and experts in their respective field. Samsung looks to employ such people to push its innovations forward. (Samsung 2016, 131.)

Huawei is of the firm opinion that research is more gainful if executed together. The company attempts to enter many research cooperations and research clusters. (Tao and Chunbo 2015, 54, 62-63, 65, 69; Luo et al. 2011, 68.)

Samsung also recognized the importance of cooperations and open source innovation networks. It profits from smart and creative outsiders who are encouraged to contact Samsung if they have profitable ideas to offer. If these are deemed useful and realizable Samsung takes over the realization of such projects. (Samsung 2016, 88, 132-136, 139-140.)

Important collaborations have to be conducted between the research sector of a company and the marketing department to guarantee an ideal process to market a new or improved product. However, apparently Samsung and Huawei both manage this field quite well. (Zhang 2013, 3.)

5.3. Problems

As the Republic of Korea and China are entirely different considering their political systems and economic approach, the companies these countries generated are very distinctive in their structure as well. This makes their individual as well as country-related problems quite diverse. However some issues can be compared as they are universal and usually problematic to some degree in most countries.

In East Asia issues with working conditions are universally known: People either overwork or have to do their jobs under conditions so terrible and unsafe, workers turn into victims fast but the conditions usually do not improve or change at all after accidents as cheaply manufactured products are more important for beating competitors and stimulating the economy. Overworking with the consequence of dying is reality in Huawei as well as Samsung Electronics. Also suicides due to too much stress are notorious in China and South Korea and also in the described companies. (Tao and Chunbo 2015, 33-35, 41, 78-79; Luo et al. 2011, 69; Fan 2011, 835; Oster 2014, online article; Shin et al. 2017, 843, 845-847; Samsung 2016, 49.)

Other reasons of death or grave injury are the working conditions in the firms' factories. In some of Samsung's manufacturing facilities numerous cases of cancer and other diseases spread under the workers but Samsung tries to get rid of the responsibility and the affected workers or their families have a hard time demanding compensations. Accidents of maintenance teams happened as well, probably due to human errors as consequences of working overtime. (Dilger 2016, online article; Samsung 2016, 33; Unknown author 2016, online article; Souppouris 2014, online article; Samsung 2016, 68-70; China Labor Bulletin 2007, 3, 49-50; Huawei 2017 B, homepage.)

Samsung still holds the problem of not offering its workers proper representation through a labor union. Huawei has a labor union however some voices state that this union is not a 100 per cent behind the workers' interests. (Chang 2012, 1450-1451; Glowik 2016, 137; Unknown author 2016, online article; Tillman 2013, online article; China Labor Bulletin 2007, 3, 49-50; Huawei 2017 B, homepage.) In Huawei's case however there are some public troubles with outsourced companies abroad, involving unfair treatment of workers or attempting to press spending even further through switching outsourced work in South Africa to even cheaper countries. (Dempsey 2017, online article; Unknown author 2013, online article; Lukman 2013, online article.)

China's education system is often criticized for being too competitive and relying on repetitive exercises which do not produce leaders or creative minds albeit the many graduates from third-level education the country has to offer. Some blame the old Confucian system that may or may not still hold influences over the education system. However there are counter-measures in place which are supposed to improve the faulty system and ensure China's ongoing success and development in this field. Korea also has similar troubles and as the country wants to establish a knowledge-based society similar issues have to be reformed. (Kenney 1998, 1-2; Wong and Cheong 2014, 370-371; Kwon 2010, 41, 106-108, 113; Coase and Wang 2013, 190-193; Johnson and Chuang 2010, 391-392, 396; Defraigne 2013, 42; China Labor Bulletin 2014, 27-29, 32; Maxwell 2009, 54.)

Particularly China has a bad reputation of not meeting intellectual property rights and simply imitating designs and products from other companies. However as Huawei was founded relatively late it had to be more keen on following the expected rules and still annually pays for the usage of

other firms royalties and rights. Still law suits happen occasionally but this seems to be common in the industry. (Tao and Chunbo 2015, 67-68; Huawei 2017 A, 29; Godinho and Ferreira 2013, 1052.) Especially in its early days Samsung Electronics also did not necessarily obey to IP rights which caused it to be involved in litigations and having to repay penalty fees. Recently a conflict concerning property rights with Apple Inc. as well as between Huawei and Samsung is going on. (Kenney 1998, 21-22; Samsung 2015, 82; Wiebe 2013, 219; Lee 2016, online article.)

The Samsung chaebol is an element that specifically distinguishes Samsung Electronics from the private Chinese Huawei company. The concept of an over generations family-owned conglomerate is common in Korea and Japan but not in China. The Samsung Group cross-owns all the firms under the Samsung name and creates a web of dependence but at the same time also of competition. Due to its size it can allocate enormous resources and financial means to for example expand easier abroad. The dependence family system might stand in the way of more efficient reforms or changes. Small and medium-sized enterprises have a hard time in the Korean market with the dominance of the chaebols, however also in other markets smaller companies face more problems than larger firms with more resources. Next to the obvious advantages of a conglomerate the Samsung Group is also relatively nontransparent not only in ownership but also in shareholder power. Just a small number of people can make lasting decisions and the integration of financial institutes in the chaebol web does not contribute to more clarity. Clarity and transparency are however also issues Huawei has to improve: the company also is met with distrust as its internal happenings are kept relatively private and media coverage is sparse. Both firms could equally benefit from more openness and transparency. (Chang 2012, 1436, 1438, 1440, 1455-1456; Kwon 2010, 218, 221, 225-227, 231-233; Kenney 1998, 3-7, 10-12; Glowik 2016, 148-149; Hussain 2006, 57-59, 78; Tao and Chunbo 2015, xxxiv, 12-13, 56-57, 78-79, 208-209, 222.)

A connection and likely paternalism between the chaebols and the Korean government is evident. Before the financial crisis 1997 the state poured money into the chaebols whereas today the institutions finance various innovative projects together. The link between the chaebols and the state might lead to inefficiency or growing corruption however recently measures were taken against further faultiness and the protectionism of the chaebols for the sake of economic growth. (Kwon 2010, 4-5, 22-29, 58, 230-231; Kenney 1998, 3, 12; Chang 2012, 1438, 1440; Banjo 2017, online article; Fifield 2017, online article.)

Huawei does not hold comparable close connections to the Chinese government and never did, on the contrary in its early days the Chinese state was not particularly kind to private companies. Still some people are of the opinion that Huawei could have never transformed into the company it is today without the help of the Chinese government. Also some voices claim that Huawei does hold ties to the Chinese military, rumors that primarily surfaced because Ren Zhengfei used to have a job in the military. Huawei firmly denies any cooperation with the Chinese armed forces. (Tao and Chunbo 2015, xxi-xxiii, xxv-xxvii, xxxiv, 58-59, 78-79, 180; Fan 2011, 834; Coase and Wang 2013, 151-152, 181-182; Huang 2008, 11; Defraigne 2013, 38.)

5.4. Future outlook

Huawei has to become more transparent to stakeholders to reduce mistrust and increase its business opportunities, a problem Samsung has as well. However the Korean company is also inevitably linked to its mother ship the Samsung Group which might cause more trouble in the future. Due to its focus on electronics coming from the whole Samsung Group some scholars fear that Samsung might fail to invest properly in more future-oriented fields and miss out on opportunities or even risk its existence. (Wong and Cheong 2014, 381; Tao and Chunbo 2015, 78-79, 208, 222; Moon et al. 2013, 81.)

Interesting is the question how successful Huawei really stays if Ren Zhengfei ceases being the firm's entrepreneur. Although he planned accordingly for this case and due to Schumpeter's theory he is likely to succeed it is still an issue of uncertainty. Samsung is on the best path of demonstrating the realistic theory Schumpeter produced. Its current chairman has grave health issues and the vice-chairman is in jail and facing even more time there, still the firm is up and running, with economic success. (Tao and Chunbo 2015, 156-157, 159-160; Ebner 2009, 370-375; Reisman 2004, 74-75, 77-78; Welter 2017, online article; Fifield 2017, online article, Banjo 2017, online article.)

Further issues might arise out of external factors such as the over-aging of society, natural disasters and ethnic unrests. Other factors are for example potential new policies of the states or other changes in the political system or the markets. Improvements such as of the public education and research system as well as the ICT infrastructure would also be in favor of the two companies. (Tao and Chunbo 2015, 157; Kwon 2010, 37-39, 119-120, 122-124.)

6. Conclusion

In this chapter I want to offer a short conclusion of this thesis. First I want to do a final discussion of the research question and at the end I intend to present some final remarks.

6.1. Discussion of the Research Question

To recall the research question for the purpose of specifically and shortly concluding the most important findings of this master thesis: **Comparing the innovation processes of two East Asian companies concerning economic success in nowadays world according to a Schumpeterian framework: The cases of Huawei and Samsung Electronics.**

The analytical framework was derived from Schumpeter's works, primarily from his theories of creative destruction which indicates that companies have to create new innovative products which lose value over time as they are imitated by other companies. To stay in the market the company has to develop a new desirable product which then again is imitated. If the company ever stops innovating it will drop out of the market and make way for other creative firms which are now the main producers of new products. (Bullen et al. 2006, 60-61.) From this theory five additional indicators were deducted which each plays its part in the success a company has in this system, namely: innovation tactics in connection to productivity growth, the entrepreneurial aspect fueling a company, the competitors in the respective field, the imitator tactics the firm itself uses as well as the company intern and external research. In looking at these indicators for the case studies Huawei and Samsung Electronics a more comprehensive insight was taken into the methods these firms use to boost their revenues and profits and how they stay on the top in such a globalized world and in highly contested fields, namely the electronics sector as well as the telecommunication industry.

Considering the human resource management Samsung holds a stricter hierarchical order than Huawei with a bigger emphasis on seniority principle. Both companies want to hold their trained personnel which they attempt through fitting remunerations, career opportunities and agreeable work atmosphere. Samsung and Huawei both offer their employees ways of fighting against minor problems at their work place. The corporate systems are different: Huawei is employee-led whereas Samsung has to consider more opinions in how the company should develop. Still both firms are concerned with the well-being of their personnel. Both firms are keen on seeing their employees use house-offered advanced training as a well-educated personnel is an important asset of a firm

nowadays. In general Huawei appears to be more transparent considering the application processes of potential employees whereas doubt can be voiced in the case of Samsung. Both enterprises are involved in the education of persons not necessarily working at their respective companies. (Tao and Chunbo 2015, 27-28, 44-48, 61-69, 80-85, 96-97, 103-111, 119-121, 180-181; Huawei 2017 A, 13-14, 20, 32-34; Glowik 2016, 133-135, 140-144; Chang 2012, 1438-1452, 1454; Samsung 2016, 6, 22-23, 40-48, 75-76, 114-115, 117; Huawei 2017, 99-100.)

Both companies are keen on bringing their firms forward which requires equal negotiation abilities with all parties involved. Huawei and Samsung both see the customer as an essential part of the company structure. The customer has to be supported in every way and only deserves the best quality and services. Due to a tighter system of checks and balances it is easier for Huawei to plan ahead and follow certain company goals. Risk assessments are conducted in both companies but still, due to the ownership system of Samsung it is more susceptible to minor investment mistakes however it also has more financial cushions to forgive such mistakes. Huawei holds a more complex company philosophy whereas Samsung focuses on a broader corporate context. Samsung as well as Huawei recognize the importance of marketing and advertising their company and their products and spend significant amounts of money to attract new customers and reassure old ones. The production processes and product quality are up to date in the cases of Huawei and Samsung. Supplying companies are required to uphold the same standards the two companies want to guarantee their customers. To assure this promise the suppliers can be supported if need be. Safety for workers and products is a basic requirement of both companies as is data security and the non-acceptance of critical raw materials in the manufacturing processes. The firms need innovation to stay in the market and are determined to improve their portfolios through the newest technologies but Samsung has more first-mover ambitions than Huawei. (Tao and Chunbo 2015, 15-19, 24-25, 32-35, 66-67, 79-80, 87-95, 129-155, 193-224, 235-237; Samsung 2016, 24-36, 53-63, 83-107, 124-133, 138-139, 185-196; Samsung 2017, 5, 24, 42-43, 54; Huawei 2017 A, 10-11, 18, 22-23, 38-63; Ali et al. 2011, 2886-2887; Lee et al. 2015, 3-8; Glowik 2016, 137-138, 151-154; Zhang 2013, 1-6; Lee 2006, 12, 29, 44, 60-68, 76-77; Huawei 2017, 14-15, 44-47, 113-119; Chang 2012, 1453-1454.)

To the entrepreneurial aspect of the two companies it can be stated that the founders of the firms can be considered entrepreneurs however both did not use any first-mover advantages but acted as imitators. Samsung is a family-owned business which is passed from one generation to the next. Huawei however is employee-owned and Ren sees to it that the company will live on even when he is gone. Through the recent developments one can however see that Samsung is de facto without an entrepreneur and still does fine which confirms Schumpeter's theory of the different divisions of a company working together seamlessly and producing and launching innovations on its own. Ren Zhengfei and Lee Kun-Hee both developed company philosophies for their enterprises and were concerned by the heavy competitions in their respective fields as well as by global developments and recent happenings in their respective home countries. Both chairmen created situations of urgencies to force their employees to accomplish their best. However Samsung has more stakeholders to be concerned about. Although the rights of Huawei's employees are supported by a labor union it is claimed that this institution could do more for its protégées. Samsung however has no labor union at all. Both firms had to reform their company structure through their years of existence to adapt to changing market situations. Other ways of improving and saving costs were also conducted by Huawei and Samsung. Both firms are demonstrating their will to act environmentally friendly through saving energy and recycling. Human rights and abidance to laws are critical to attract customers nowadays. As huge companies both Huawei and Samsung hold corporate responsibilities which they pay in financing school projects or supporting other less fortunate members of society. (Huawei 2017 A, 13-14, 28-60, 67, 71, 78-87; Tao and Chunbo 2015, 12-13, 20-50, 61-62, 70-71, 94-97, 114, 132, 152, 157, 160-169, 180-192, 197, 224-226; Huawei 2017, 20, 48, 99-100, 104; Schumpeter 1939, 240-246; Kenney 1998, 18-23; Chang 2012, 1440-1444, 1450-1452; Glowik 2016, 133-148; Lee 2006, 10-11, 18-23, 34-47, 52, 174-175; Ali et al.

2011, 2875, 2879-2885; Fifield 2017, online article; Lee et al. 2015, 2, 7; Samsung 2016, 5-7, 22-23, 31, 53-78, 108-123, 142-174; China Labor Bulletin 2007, 3, 49-50; Moon et al. 2013, 79-82.)

In the fields Huawei and Samsung deal in competition is huge: Huawei has the luck of being in a sector that the Chinese state, usually a competitor, supports highly no matter if the firm is public or private. Samsung on the other hand faces chaebols as competition as fellow market sharers who however also buy Samsungs intermediate products which is a huge advantage of the company. Another competitor might be subsidies from the Samsung Group. Due to its non-transparency is Huawei not a popular company in the global market, troubles Samsung does not face while being equally nontransparent. To be distinguishable from competition marketing is a key word for both firms. Huawei wants to improve the telecom market for all firms in it and emphasizes collaborations. To not suffocate the important small and medium sized companies of Korea Samsung tries to support them with loans and collaboration centers. Both firms have global as well as national competition in their respective fields. (Coase and Wang 2013, 136-145, 169; Luo et al. 2011, 69-71; Tao and Chunbo 2015, 18, 35-37, 58-74, 78-81, 86, 104, 128, 189-190, 208-209; Glowik 2016, 150-154; Gnyawali and Park 2011, 651-658; Samsung 2015, 70-75; Zhang 2013, 6-8; Lee 2006, 29, 44, 60-68, 76-77; Fan 2011, 838; Huawei 2017, 48-49; Samsung 2016, 89-92.)

Considering the imitation aspect Huawei is mostly imitating products for improvement reasons which it pays royalties for. Samsung needed help in the design sector which it got from more advanced firms. Still the company is recently involved in litigation cases. Both firms are primarily imitating products and are not the first-movers Schumpeter would be prouder of, however that is a syndrome of the industries. Through collaborations and the headhunting of employees the companies gain more insight in technologies without needing to pay royalties. (Zhang 2013, 8; Huang 2008, 11; Tao and Chunbo 2015, 55-57, 65, 197-198; Kenney 1998, 21-22; Samsung 2015, 82; Wiebe 2013, 219; Korres et al. 2003, 293; Fagerberg 2005, 15; Rosenberg 2000, 69-71; Glowik 2016, 156.)

In the field of research and development the Chinese company employs more staff than Samsung however Samsung holds more research facilities on its own. In the case of facilities abroad their main task is to spot for future developments and scan the foreign market for trends. Samsung spent more money on research in 2016 than Huawei and also holds more patents, mostly due to its earlier founding time. Both firms prefer different patenting agencies and in general Korean patents are more valuable than Chinese ones. Both firms have not yet managed to produce anything of future importance or a disruptive innovation. (Samsung 2017, 9, 34; Huawei 2017, 42-43, 50; Huawei 2017 A, 5; Huawei 2016, 42; World Intellectual Property Organization 2016, 16-17; Samsung 2016, 125, 130; Godinho and Ferreira 2013, 1046-1050; Fan 2011, 833-834, 838; Glowik 2016, 154-155; Lee 2006, 69-74.)

In numbers one realizes quickly that Samsung Electronics creates more revenue as well as more profits than Huawei. A reason for that is of course the larger size of the revenue which has to generate more profits. Samsung has furthermore access to larger financial resources due to being listed on the stock market and part of a chaebol. This on the other hand also leads to higher equities than Huawei has to cover. Despite being smaller in employees and revenue Huawei holds more assets than Samsung. Considering a comparison of the past three years so are these values always approximately of the same relation between the two firms. (Huawei 2017, 8, 19, 50-52, 58, 77; Samsung 2017, 8-9, 110-114; Huawei 2017 A, 10; Samsung 2015, 40-42, 77, 79; Samsung 2016, 10, 199-204.)

Might the higher financial success of Samsung albeit using more traditional corporate values come from the fact that the company appears to be more focused on countries which are more developed and as such can pay more for Samsung's products? Samsung is cheaper than for example Sony but

still not easily affordable for developing countries. Samsung's portfolio also holds goods of varying price categories. One can buy a Samsung TV for 500 Euros as well as for 2000 Euros and this concept can also be applied to all of the other electronics Samsung sells which gives it a broad target market. Huawei however deals more extensively with developing countries and plans the total connection and internet access of the entire planet. As such it has to adapt its prices so everyone can afford them easily which cannot create incredibly high revenues and profits. Huawei becomes more popular in Europe and also attempts to offer more varying products concerning price and quality to also attract customers that prefer and can afford high-class smartphones but if it wants to stay true to itself and its slogan, it cannot boost prices but has to always consider its target market and match prices for services according to a country's wage level. Furthermore telecom services are not as profit realizing as one has to maintain them constantly whereas electronic goods can be sold at higher prices and are not in frequent need of services. (Huawei 2017 A, 4-6, 10-11, 15, 17, 66-69; Lee 2006, 17-18; Unknown author 2017, online article.)

Desired future outlooks are a further opening process connected with more transparency for both firms with a possible future transformation from Samsung Electronics away from its Group and towards a more international corporate structure. The issue of the Schumpeterian replacement of the entrepreneur through the company appears to be already in place for Samsung and the future will see what this tactic brings for Huawei. Further issues which could stop the successes of Huawei and Samsung are external factors which are not in the control of the firms. (Wong and Cheong 2014, 381; Tao and Chunbo 2015, 78-79, 157, 208, 222; Moon et al. 2013, 81; Ebner 2009, 370-375; Reisman 2004, 74-75, 78; Kwon 2010, 37-39, 119-124.)

6.2. Final remarks

In this thesis I compared the two East Asian companies Huawei and Samsung Electronics according to a framework deducted from Schumpeter, an attempt that was not tried in that form with Asian companies before. I deem the comparison through the derived indicators successful to establish differences and similarities of the innovative methods of the two firms.

Considering the case studies I picked, I realized that a comparison worked but that further cases from China and South Korea as well as from the sectors electronics and telecommunication would offer a broader picture and establish just how successful Huawei and Samsung really are, particularly in comparing the financial indicators. Another interesting expansion would be the adding of American or European company cases.

The fact that Huawei and Samsung Electronics hold completely contrasting backgrounds, corporate structures and also partly varying markets did not facilitate a comparison as all the differences always have to be put into consideration which leads away from the actual research question.

This issue furthermore causes troubles in trying to implement the company cases on the country or the Asian region which cannot be done with a quiet conscience as the results from a comparison of just two cases were already diverging, particularly in terms of the actual financial output numbers.

Innovation certainly influences a company's economic successes however even with the comparison of relevant financial indicators it is hard to assess how much is caused by innovation and how relevant innovation actually is for the fiscal success as both companies deal in state of the art technology but cannot (yet) offer anything seminal.

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8. Appendix

8.1. List of Illustrations

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8.2. Zusammenfassung

Die Masterthese “Comparing the innovation processes of two East Asian companies concerning economic success in nowadays world according to a Schumpeterian framework: The cases of Huawei and Samsung Electronics.”, zu Deutsch etwa “Ein Vergleich der Innovationsprozesse zweier ostasiatischer Firmen aufgrund ihrer aktuellen wirtschaftlichen Erfolge nach einem Schumpeterschen Framework: Fallstudien von Huawei und Samsung Electronics.” vergleicht die südkoreanische Firma Samsung Electronics mit der chinesischen Firma Huawei und untersucht die beiden Firmen betreffend ihres wirtschaftlichen Erfolges, hervorgerufen durch Innovation und ihrer Fähigkeit Einnahmen und Profit zu generieren sowie neue Kunden anzulocken.

Die These basiert auf einem analytischen Framework nach Schumpeter, einer Methode, die in dem Feld des Vergleichs zwischen ostasiatischen Firmen noch nicht verwendet wurde obwohl die Aufhol- und Innovationsprozesse asiatischer Marktneulinge bereits gut untersucht sind.

Es wird ein Vergleich basierend auf qualitativer Forschung und einem induktiven Ansatz durchgeführt, der sich auf bereits vorhandenes Datenmaterial und Sekundärliteratur stützt. Die Fallmenge ist mit zwei Firmenbeispielen klein gehalten, jedoch sind diese repräsentativ für die aktuelle Wirtschaftssituation und für ostasiatische Firmen die ihre Güter erfolgreich im Ursprungsmarkt als auch weltweit vertreiben. Das Ziel ist das tiefere Verständnis über die Methoden und Entwicklungen der gewählten Firmen in den Jahren 2010 bis 2017, da dieses zu allgemein gültigen Annahmen für die Beispielländer oder die asiatische Region führen kann.

Indikatoren, welche die Kreativität und somit den wirtschaftlichen Erfolg einer Firma im Markt darstellen wurden aus dieser Theorie abgeleitet und sind: Der innovative Geist einer Firma, die Konkurrenz im jeweiligen Sektor, die von der Firma betriebenen Forschungen, weitere Innovationstaktiken, sowie die Fähigkeiten der Firma zur Imitation von Produkten und Prozessen.

Beim Vergleich von Schlüsselindikatoren der Finanzreporte der zwei Firmen bemerkt man, dass Samsung deutlich mehr Erträge und Profite macht als Huawei, jedoch weniger Vermögenswerte aufweist, dafür aber mehr Verbindlichkeiten und Aktienkapital.

Huawei weist eine Firmenstruktur auf, die im Besitz der Angestellten ist und über mehr Kontrollen verfügt was die Verfolgung von Langzeitzielen erleichtert und Ressourcen schont. Weiters hat die Firma einen transparenteren Anheuerungsprozess und bietet ihren Arbeitern Schutz durch eine Gewerkschaft.

Samsung hat mehr Ambitionen eine Vorreiterinnovation zu erschaffen und ist auch in der Lage seiner Konkurrenz Zwischenprodukte zu verkaufen.

Beide Firmen bestehen auf die Weiterbildung ihrer Angestellten und sehen die Kunden und deren Wünsche als wichtigsten Faktor. Huawei und Samsung versuchen ihre Sektoren und die darin befindlichen Firmen zu unterstützen und einen kreativeren und innovativeren Markt zu erschaffen. Beide Firmen streben, freiwillig und unfreiwillig, ein Unternehmertum an das nicht von einer Person angeführt wird, sondern von der Firma und ihren Abteilungen selbst.

Beide Firmen haben unterschiedliche Vorteile in ihren jeweiligen Gebieten und versuchen durch allgemeine sowie individuelle Ansätze erfolgreicher zu werden.

8.3. Abstract

This Master thesis with the title “Comparing the innovation processes of two East Asian companies concerning economic success in nowadays world according to a Schumpeterian framework: The cases of Huawei and Samsung Electronics.” compares the Korean company Samsung Electronics with the Chinese firm Huawei considering the enterprises’ economic success through innovation and the ability to produce revenue and profits and attract new customers.

The thesis is built on a Schumpeterian analytical framework, a method that has not been used in the field of comparing East Asian companies before albeit many scholars already researched the catching-up processes and innovativeness of Asian newcomers.

The research was conducted in a comparative way and the thesis is built on a qualitative research with an inductive approach relying on already available data and secondary literature. Only a small sample of two cases will be described; however these are very representative for today’s economic situation and for East Asian firms which successfully sell their products in their home markets as well as globally. The aim is to find deeper understanding and knowledge about the methods and developments of the companies picked in a time frame between 2010 and 2017. This might lead to general assumptions for the countries or even the Asian region.

Indicators which point at how creative and hence successful a company is in the market were derived from an analytical framework after Schumpeter’s theories and include the entrepreneurial aspect of a firm, the competitors in the field, the research conducted by the firm itself, other innovation tactics used by the firm and the firm’s ability to imitate products and processes.

Considering key indicators from the two firms’ financial reports it can be seen that Samsung generates significantly more revenue and profits than Huawei but holds less assets and more liabilities and equity than the Chinese company.

Huawei holds an employee-owned company structure and has more checks and balances which help it achieve long-term goals without wasting resources. It also has a more transparent hiring process and offers its workers a labor union.

Samsung has more ambition in achieving a first-mover innovation and it is also in the position of selling its competitors its intermediate products.

Both firms put an emphasis on further employee training and see the customers and their wishes as the most important factors. Huawei and Samsung both try to support their sector and fellow companies in it to create more efficient and innovative markets. Both enterprises voluntarily and involuntarily reach for a state of entrepreneurship which does not require a human being to be in the role of the entrepreneur but allows the company and its divisions to take up this job.

As a conclusion both firms have different advantages in their respective fields and conduct some general as well as individual attempts to become more successful.