



**The Competitiveness of Tampere Central Region
in
Localization Decisions of ICT Companies**

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Abstract

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The study will be conducted because of the recent changes in ICT industry inside Tampere Central Region. The ICT industry is going through massive structural changes, because of the major strategic changes of companies. Tampere Central Region needs more companies to be able to achieve growth and offer jobs for professionals in the field. The reason to conduct this study is to gain an idea of how competitive Tampere Central Region is when ICT companies decide to locate an office somewhere. When Tampere Central Region has an idea where they are more competitive than other similar areas, they are capable of enhancing their marketing points, and gain information on what should be improved to gain competitive advantage. The study will also provide theoretical information on what makes an area competitive, which can be utilized to increase the competitiveness of Tampere Central Region.

Tampere Central Region has some minor competitive advantages compared to the selected areas. It would seem that other areas have clear advantages over Tampere Central Area, in the light of the criteria selected for this study. There is a lot to improve here in Tampere, but there are definitely points that can make an ICT companies interested in Tampere Central Region. Education and research are one of the strongest points that Tampere Central Region has. Salaries vary; there are differences inside the areas, and Tampere Central Region is somewhat above average.

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1 Introduction

The final thesis is done for Tredea Oy, more specifically for the Invest in Tampere team, to support their new strategic reforms and their work with the Tampere All Bright! brand. Tredea Oy is the Tampere central regions economic development agency, one of the main customers are the companies who have interest in investing in Tampere central region. Tampere Central Region is an area, that includes 8 different municipalities; Tampere, Ylöjärvi, Nokia, Lempäälä, Orivesi, Kangasala, Pirkkala, Vesilahti. The company also has various projects i.e.: seeking innovative ideas and helping companies to capitalize on them, ensuring the availability of skilled labor force and enhancing the tourism of the area. Tredea's new strategy makes the company even more focused in marketing the Tampere central region and the thesis will provide important information on the international competitiveness of the region.

The goals of Invest in Tampere are to create more jobs, competition, innovations, services, products and to encourage growth. Invest in Tampere has the same goals and mentality as invest in Finland, although in smaller scale. The method used to achieve these goals is to bring more investments to Tampere central region. The people working in the Invest in team try to lure companies to Tampere central region by actively marketing the area and helping the companies to set up their activities to an area. Invest in activities are practiced to ensure the growth of the economy and availability of skilled workforce.

1.1 Background information

The study will tell us relatively accurate facts about why an ICT company should set up business in Tampere central region and about the competitive situation of Tampere central region compared to similar regions in northern Europe. The new strategy of Tredea Oy reformed the company to focus more on luring new

companies to Tampere central region. The study will provide information on what is advantageous and disadvantageous in the Tampere central region regarding competitiveness of the region. The study will also support the “Tampere All Bright!” brand and international marketing on a general level by giving pointers which can be used in marketing the region.

There are various reasons for selecting ICT as the focus branch of the study. Tampere central region has a very developed ICT sector, which has a remarkable impact on the economy of the region. Tampere has very skilled workforce and developed education system supporting ICT business. The research is also needed because of the current issues in Tampere central region; Nokia lay-offs, which works as a catalyst for changes in ICT business, and their decision to keep the R&D section in Tampere. The lay-offs free a lot of skilled labor force, which is an advantage for Tampere central region as Tampere central region could be able to offer more skilled labor force for companies setting up business to the area.

1.2 Goals for the thesis

To form a view on the international competitiveness of the Tampere central region in the subject of ICT companies setting up business to a certain region.

Finding the critical criteria for the businesses is necessary to be able to analyze the areas and compare them to Tampere central region. Criteria will be determined by interviewing professionals of the field. The critical criteria will be limited to a certain amount, 1–5, depending on the outcome of the interviews.

The main point of the research is to compare Tampere central region to the selected areas and see how well Tampere fares in competition with the areas. Tampere central region will be compared to 3 towns after each town has been evaluated in the light of the selected criteria.

The goals here match the background and reason to conduct this study. The critical criteria will give information on what should be thought about when marketing Tampere Central Region to companies. When this is known, Tredea Oy can make their marketing points more efficient and relevant. The comparison gives Tredea an idea on where they stand in competition with other areas, and how they could possibly distinguish themselves from other areas. When they know what is advantageous in Tampere Central Region they can directly market these strong points to companies. The comparison also provides information for Tredea Oy on other areas and they are strong at.

1.3 Research methods

The research will utilize qualitative methods as the main research method. Qualitative methods include interviews and analysis of the selected areas. Professionals in the field will be interviewed to gain information on the criteria that an ICT company utilizes when they evaluate different areas where to set up an office. The cases are always different; however, the point of the study is to evaluate the overall competitiveness of the Tampere central region. The professionals might be also asked guidance and opinions on which towns and areas resemble Tampere central region the most.

Analysis of the selected towns will utilize the information gained from the interviews and several theories. The theories include; PEST and SWOT analysis, Porters' five forces model, localization theory, globalization theory to a certain extent and corporate decision making. Relevant information the comparison towns will be gained through publications of the economic data. If necessary, the towns in question will be contacted.

2 Theoretical framework

2.1 Porter's five forces

Professor Michael E. Porter argues that there are five competitive forces that operate in an industry and together determine the potential profitability of that industry. (Bowman & Faulkner 1997, 82) The five forces are the following ones; Rivalry among existing firm, the barriers to new entrants, the bargaining power of buyers, the bargaining power of suppliers, the threat of substitute products or services.

2.1.1 Rivalry

“Rivalry refers to the intensity of competitive behavior within an industry” (Bowman & Faulkner 1997, 82.)

Rivalry explains to us how companies try to compete within a certain industry and what methods they have at their disposal when forming strategies to compete against other firms. Such methods include; price cuts, innovations, advertising, credit deals and promotional campaigns. The way these methods are used determines the intensity of competition. (Bowman & Faulkner 1997, 82–83.) There are industries where many similar companies exist with equal market shares seeking to increase their market share. It could be that there is very little distinction between the companies, and products, and the market may be mature with no major innovations or design breakthroughs in foreseeable future. These factors will lead to very high level of competition. (Capon, 2000, 79.) There is a possibility that companies might not want to compete intensively in the industry because this would upset the market balance and lead to various problematic situations, like price wars, which might ultimately drive down the profitability of companies. (Bowman & Faulkner 1997, 82–83)

“There are a number of factors which, Porter suggests, determine the probably intensity of rivalry in an industry” (Bowman & Faulkner 1997, 83.)

2.1.2 Factors determining the intensity of competition

Slowing growth of demand or declining demand. When demand starts to slow down, a company must increase their market share to keep their growth rate similar to previous years. This will lead to competition between companies inside the industry. Methods used in situations like these are usually price cuts and various attempts to boost sales. If the demand is declining instead of growth of the demand slowing, the situation will lead to more intense competition because market shares of the companies will decrease more rapidly. The possible existence of exit barriers force companies to compete inside the industry because none of the companies can exit the industry. (Bowman & Faulkner 1997, 83)

High fixed costs: When an industry has high fixed costs and low marginal cost of components the companies are required to produce at full capacity. In the case of demand falling, the companies must use various methods to maintain sales and market share. (Bowman & Faulkner 1997, 83)

Unpredictable and diverse competitors: Competition can be highly unpredictable when an industry has many different groups of firms operating in it. New entrants might increase the unpredictability and volatility of the market, especially if they come from a foreign environment and do not play by the local rules. (Bowman & Faulkner 1997, 83)

Low switching costs: Switching cost is the cost of switching supplier from one to other. Costs can be tangible or intangible, tangible costs are monetary and intangible can be, e.g., good connections with the supplier. If the industry has low switching costs it will decrease the intensity of competition because they are

capable of changing supplier easily without losing much and they are not as dependant on them. (Bowman & Faulkner 1997, 83)

A commodity product: A company has to worry less about its competitors when it has established a position where the reputation of a company or its product is very distinguishable from competitive products and companies. The more the product resembles other products the more it is vulnerable to competition. (Bowman & Faulkner 1997, 84)

2.1.3 Barriers to entry

Porter argues that, if a new firm enters the market it will increase production and if this excess production is not met by increased demand the market situation will lead in to a competitive environment. (Bowman & Faulkner 1997, 84.) The threat of new entrants will increase the more the industry is attractive to them. Two factors determine the attractiveness of an industry, enough potential customers to support activities of the new entrant and high potential profits including low set up costs. (Capon 2000, 79.) New entrants must apply various methods of competition to be able to enter the market and the utilization of these methods will most likely decrease the profitability levels of the industry. (Bowman & Faulkner 1997, 84.) The complete set of entry barriers according to Porter are discussed further.

Economies of scale and capital costs of entry:

“If there are major cost advantages to be gained from operating on a large scale, then new entrants will either have to match that scale, or have higher unit costs, and suffer lower margins”

(Bowman & Faulkner 1997, 84.)

The industry, which the new entrant plans to enter, might need high investments to start operations and this will act as an entry barrier because it might not be profitable to enter the industry.

Experience benefits and access to knowhow: Cost efficient ways of production can be gained by experience. Companies inside a certain industry might have refined their production methods over the years, which will place the new entrant at disadvantage by default when they enter the industry. Patents protect knowledge of firms and disable new capabilities of entrants to acquire needed knowledge to gain competitive advantage in new industry. (Bowman & Faulkner 1997, 84)

Customer Brand loyalty and high switching cost: A part of the customer base has probably formed preference to a certain brand existing in the market, which might prove to be difficult to break by the new entrants. It is possible that costs for customers to switch from an already established product to a new one are too high, which might prove out to be difficult for the new entrant to manage. (Bowman & Faulkner 1997, 84)

Government policies can act as barriers to entry because some government might have interests to protect certain industries or products. Governments have a variety of measures to form barriers; taxation, licenses and trade barriers. (Bowman & Faulkner 1997, 84)

2.1.4 Bargaining power of buyers

In an industry there are two kinds of buyers, commercial and individual consumers. Commercial buyers bargaining power depends on how many substitutes are available and are there alternative suppliers for the product, because when the commercial buyer has multiple choices it has a better negotiation position. The bargaining power of a consumer is lesser than the power of the commercial buyer because they usually cannot have an effect to prices on their own. Consumers have the same opportunity to choose between different products, and the more there are substitutes the more they have options to choose from. However, as stated before, they do not have the negotiation power to affect the price. (Capon 2000, 80)

There are numerous other factors affecting the bargaining power of buyers. When there are few buyers and they buy in large quantities, low switching costs, the option to pick from many small sellers and when the item is not important for the buyer. (Bowman & Faulkner 1997, 85)

2.1.5 Bargaining power of suppliers

Suppliers have the capability to increase their prices and have a major effect on the profits of buyer when certain criteria are fulfilled. The criteria for the this situation to take place, according to Bowman & Faulkner (1997, 85) are; When the purchase is important to the buyer, when buyers have high switching costs, there are only a few alternative sources of supply or there is a risk that supplier moves forward on the chain and sets up their own subsidiary which utilizes the raw materials of the supplier.

2.1.6 Threat of substitute products or services

Substitute products are products which fulfill the same needs as one product, but are technically different products. The effect that substitute products have on the competition of certain industry is that they set a certain maximum price level on the products. Customers might switch to a cheaper substitute if the price level of a product increases to a level where the customer sees the substitute as a more cost efficient choice. According to Bowman & Faulkner (1997, 86)

”The threat of substitutes is high when; there are a number of equally cost efficient ways of meeting the same customer need, the customer faces new switching costs in moving to the substitute product or the customer exhibits high price sensitivity, and the substitute is low priced. “2.3 Competitive strategies

2.2 Competitive strategies

To operate successfully in an industry when Porters five force model competition exist, a company must form a competitive strategy to gain sufficient profits for being able to survive inside the industry.

According to Capon (2000, 83), Competitive advantage is gained when an organization achieves a strategic position in an industry due to cost or differentiation factors, which allow it to make above average or superior profits. There are four types of strategic positions that a company can take; Cost leadership, Differentiation, Cost focus, Differentiation focus.

2.2.1 Cost leadership

Cost leadership should be striven for when the industry operates on a large scale, targeting mass markets, and they supply standard products or services. Competition will be probably fierce as the method of competition will be price levels and gaining maximum profits by lowering the costs per unit. Cost leadership is achieved when the production cost per unit is the lowest in the industry. Profits and costs will be average in the cost leadership kind of a competitive environment, as it is very difficult for companies to raise prices inside the industry, and because the products are standard the costs will be average. (Capon 2000, 84)

2.2.2 Differentiation

A company choosing the differentiation strategy will add additional value to its products and gain competitive advantage over its competitors. Differentiated product is still targeted for mass markets but the difference is that the product should have additional features, quality or intangible value, e.g. brand, for which the customers are willing to pay more. This enables the company to gain better than average profits because the basic costs per unit is the average cost and

the added cost of the features and in addition they can charge the customer a premium price for the special features of the product. (Capon 2000, 86)

2.2.3 Focus strategies

When company applies a differentiation focus strategy it will focus to fulfill one niche market and gain competitive edge in the niche market. Successful application of niche market strategy requires the company to identify the market segment where the mass producers have the weakest standing. They have to also identify the differences between different market segments to differentiate their product. (Capon 2000, 87)

Cost focus strategies aim for markets where the customers are very price sensitive. Companies must have very low producing costs, as the product prizes will be low in the markets. Differentiation focus is chosen by companies who aim for markets where customers are willing to pay high prices for products which are differentiated to be of high quality or have a luxury brand. Costs will be high, but the profits will be above average too. (Capon 2000, 87)

2.3 PEST analysis

Pest analysis is used to analyze the macro environment of a given area. Pest stands for Political, economic, social (including legal and cultural) and technological environments, which it aims to analyze in a given area. (Hooley, Piercy, Nicolaud 2008, 61)

When corporations are assessing the political environment in which they operate, they have to consider many factors; taxation and fiscal policy, national and supranational governments, regional trade and trade areas. There are many factors which should be taken into consideration when assessing the economic area where the company operates; employment and unemployment, interest rates, consumer and business confidence, economic growth rates and the business cycle. Social factors include the culture of the society, age

structure and population growth rate. Technological assessment of a given area should include the infrastructure of the country, the availability of high technology and the rate of technological change. (Hooley, Piercy, Nicolaud, 2008, 62)

2.4 Theoretical aspects on the competitiveness of nations and regions.

2.4.1 Basis factors for competitiveness of a nation

The basis of the theory concerning competitiveness of nations is the Porter's five forces model and the competitive strategies which have been discussed previously in this thesis in chapter 2.1.

Porter argues in his book competitiveness of nations that the efficiency of production is the key in assessing the competitiveness of nations because productivity increases the living standards of a nation. Productivity is gained through firms that achieve high standards of productivity and are capable of developing their productivity constantly through innovation and successful strategies. (Porter, Kansakuntien kilpailuetu, 37)

International competition hinders and offers possibilities for nations to increase their productivity. International trade increases the productivity of a nation by offering the country the option of importing products which are unfavorable to produce domestically. While doing so the country can focus on the products that are favorable to produce domestically and this increases the average productivity inside the nation. International trade hinders the competitiveness of nations by setting absolute standards for competitiveness that the companies must top to be able to sell their products across the globe and naturally if companies cannot match their international competitors their products are not profitable and they will not provide much for the country they reside in. (Porter, Kansakuntien kilpailuetu, 37–41)

2.4.2 Factor conditions

Factor conditions mean resources that are needed to compete in a certain industry. These resources include: labor force, arable land, natural resources, capital and infrastructure. Factor conditions are divided into two different categories, the basic factor conditions and the advanced factor conditions. The basic factor conditions consist of natural resources, labor force, climate, capital and location. Advanced factor conditions include highly skilled labor force, digital information networks and the research centers of universities. (Porter, Kansakuntien kilpailuetu, 120)

The utilization of factor conditions is crucial for constructing a competitive environment for a nation. More important than the existence of these factor conditions is the effectiveness of the utilization. Advanced factor conditions are more important for the competitiveness because they provide more differentiation for the products and provide continuous innovation. Basic factor conditions support the advanced factor conditions, but they are not as important because they are widely accessible for companies around the globe and they are replaceable. (Porter, Kansakuntien kilpailuetu, 120)

As stated previously, the advanced factor conditions are more important for the competitiveness of a nation. Countries are effective in competing in industries where they have the capability and will to create advanced factor conditions. Advanced factor conditions have to be created, instead of being inherited like basic factor conditions, by institutions like public and private education, or research centers, and public hospitals. The mechanisms that create advanced factor conditions are more important for the country, regarding competitiveness, than the existing factor conditions. (Porter, Kansakuntien kilpailuetu, 120)

It is possible to form a competitive advantage over a disadvantage in factor conditions. Lack of factor conditions will create a pressure to innovate ways to compensate the lacking factor conditions. Successfully implementing innovations to compensate the lack of factor conditions will create a competitive advantage for the industry. These innovations will harness the local advantages as they are usually done in conjunction with them, and harnessing local

advantages is crucial to creating competitive advantage. (Porter, Kansakuntien kilpailuetu, 120)

2.4.3 Demand conditions

Demand conditions in a home country of a corporation are important because they provide a possibility for a company to see how their products are seen by customers from a close distance. The companies are more capable of recognizing needs of customers, and reacting to them, when the customers share the same culture and, as said before, reside nearby. So, when the demand conditions are highly developed for an industry in a country companies can utilize that to create competitive advantage for them. If the company tries to set its eyes on foreign customers only, they put themselves in a disadvantage because it is much more difficult to see the needs of customers far away from the company headquarters. (Porter, Kansakuntien kilpailuetu, 131–132)

Segmentation of the demand conditions provides help for companies to create competitive advantage in global competition. When a certain segment of an industry is strong in one country, it will give a company tools to create competitive edge on the certain segment. More demanding customers in a home country of a company, than abroad, force them to improve their products with swifter pace than foreign competitors. This will put domestic companies to a competitive advantage over foreign firms. Also, having a customer base in a country that has dedication and knowledge on a certain product can provide immensely important resource for feedback for development. (Porter, Kansakuntien kilpailuetu, 134–135)

2.4.4 Size and growth of demand

The fast pace of growth in domestic markets increase the investments of a firm and increases the speed in which the company acquires new technologies to increase their efficiency. If we can suggest that the growth of the industry, in a certain country, will provide forecast for the international growth of a given industry, and it is ahead of its time, we can assume that the company that has a headquarters in the country has a major competitive advantage in forecasting international potential growth, and if this is the case, they are already established a position in the said field before international competitors. (Porter, Kansakuntien kilpailuetu, 138–139)

The size of the domestic demand does not affect the competitive advantages nearly as much as the pace of growth does. Big size of demand in the home country of a company does not necessarily provide a competitive advantage for the company in international markets, because the company might focus too much on domestic demand and neglect the international demand or if the demand does not reflect the international demand at all. The companies have to invest in foreign markets, when the domestic markets are small, which creates more capabilities to compete in international environment. (Porter, Kansakuntien kilpailuetu, 141–143)

As important as getting early entrance to domestic markets, is the early tiring of domestic customers. What is meant by this is that the domestic buyers lose interest in the products. This will pressure the companies to compete fiercely and expand their markets to foreign countries. More strict competition creates more innovation and cost efficient ways of production, which will create competitive advantage for the companies that survive the competition. (Porter, Kansakuntien kilpailuetu, 141–143)

2.4.5 Related and Supporting Industries

Supportive industries and industries operating close to an industry support a certain industry by creating innovations and technologies that might be useful for the main industry. Having good sub contracting companies in the home country of a company will provide various benefits for them. They are capable of forging alliances easier because the companies share the same culture and are situated near each other. Information flow is smoother between domestic companies which make them capable of exchanging ideas, news more willingly, because they will support each other, and to help each other to solve problems. The costs of partnership will be smaller because they the companies can operate more fluently with each other. If the contractor companies are operating in a globally competitive environment the cooperation will be fruitful, as the contractors are able to provide information gather globally. (Porter, Kansakuntien kilpailuetu, 149–150)

Similar industries support each other by being able to share or divide activities within a value chain. They can supplement each other. Innovations made in similar industries support each other, because they might be applicable with similar industries. Also, the increased demand within an industry might increase the demand in similar industries. (Porter, Kansakuntien kilpailuetu, 151–153)

2.4.6 Strategy, structure and competitive situation of the company

2.4.6.1 Strategy and structure

Leadership styles have an impact on the global competitiveness of companies. The styles vary from country to country which create different kind of competitive advantages for the companies and for the country. The differences between countries are related to: education of managers or their background, the emphasis on group work or hierarchy, initiative, tools for organizational management, attitude towards internalization and the relationship between management and labor force. The relationship between management and labor force is especially crucial, because it has a major impact on the innovation capability of a company. There are many factors related, to a country, that

affect the leadership styles of a company. The most important ones are the attitudes towards authority, norms affecting individual and group behavior. These factors are affected by education system and the culture of the country. The leadership styles are most suitable and are most successful when the leadership styles meet with the sources of competitive advantages that a country has. (Porter 1990, 156–157)

2.4.6.2 Goals

Major factors affecting the goals of a company are the incentives of debtors and owners, structure of ownership and management style of the company. These factors form the basis from which the company creates its goals. The goals can be short term or long term, depending on the area and business culture where the company operates. Some countries and areas favor more high short term profit forming goals and strategies; some areas favor long term profits, which tend to be lower in short term. A country can give incentives for long term or short term investing, e.g. by tax regulation. Ownership structure, capital markets and the nature of companies' leadership have twofold effect on the benefits of a country. Countries will have success when the goals of owners' and managers' goals fit with the needs of the industry. When the goals of a country are short term it favors new industries. Long term goals favor companies that need only a small amount of start up money but need also continuous big reinvestments. (Porter 1990, 158–160)

The goals of individuals also have an effect on the competitiveness of a company. The most important factor is whether the managers and employees are willing to develop themselves further and work to maintain and create competitive advantage. Reward system is a big indicator of how an individual acts in a company. Different reward system support different kinds of companies and create different kinds of competitive advantages. Where the personal bonus systems are prevalent, the companies which need people who acquire and hone their skills for a long period and operate in a system which needs complex coordination, will suffer loss of competitive advantage. Strong

commitment from individuals and capital resources create competitive advantage for a company. When people and capital are strongly committed to a certain company, they will be able to enhance and maintain the knowledge and skills they have acquired during the years in operating at an industry, which will increase the innovativeness of the company. (Porter 1990, 160–164)

2.4.6.3 Competition in home country and the effect of government

Domestic competition for companies is very important for their internalization process and for their ability to compete in a global market. Domestic competition gives the companies an incentive to broaden their market to foreign countries. Without domestic competition the companies might feel satisfied by stay in their domestic country, which does not add any value to the competitiveness of a nation. Domestic competition creates a need for companies to increase their efficiency, which they will be able to utilize when starting to compete with foreign companies. Also, they have to be more innovative than their competitors in the domestic market. Domestic competition also negates the competitive advantages granted only by the location. This will create more sophisticated and sustainable competitive advantages, which are more important in sustaining and increasing the competitiveness in the global markets. (Porter 1990, 165–171)

Competitive environment in the domestic markets will create a situation where the companies will force each other to achieve more. Information flow is more fluent inside a country, rather than across the borders. The ideas generated inside domestic companies will be spread faster and improved by other companies. This situation might not be optimal for a single company, but it is very fruitful for the whole industry, as it increases the profitability of the companies in an industry as an average. Companies tend to clump up to certain areas because of these reasons. The clumping up also enhances these advantages. If foreign competitors do not possess similar areas or environment they are hard pressed to compete against companies residing in a country with these kinds of areas. (Porter 1990, 165–171)

Government does not directly affect the competitiveness of a nation as the four previous factors do. However, governments have a big impact on the competitiveness of a nation. Government policies can either hinder or boost the competitiveness of a nation, and it does it by influencing the previous four factors. Governments can increase, or decrease, the pace at which a nation achieves competitive advantage, but it cannot create such advantage. (Porter 1990, 165–171)

3 Critical factors determining the optimal location for an ICT company

3.1 Forewords about criteria

Two experts of ICT were interviewed for the final thesis about the critical factors that a company evaluates when they are setting up an office to a new location. One must acknowledge that every ICT company makes its decisions on their own factors and each case is different from one another. The factors that are talked about in this chapter are general and apply to most of the cases to a some degree. These factors also go with the theoretical aspects discussed previously in this thesis. The factors will be analyzed based on to theory and on their applicability to this thesis. These factors are selected to suit ICT industry, but it is possible to apply them to other industries.

These critical factors in this chapter are used to evaluate the selected areas as stated in the introduction part 1.3.

3.2.1 Highly educated labor force

Availability of labor force is naturally important for companies when they need to expand their operations to a new location. Companies need also the right kind of labor force to meet their goals. Companies can opt to go for locations which offer cheap labor force if their goal is to have mundane activities that do not need highly educated work force. When thinking about the Tampere Central

Region and the whole thesis, it must assume that companies come here for highly educated workforce because there are many better options to go for if they seek out unskilled and cheap labor for mundane tasks.

As Porter argued that, highly skilled labor force is capable of creating innovation and sustainable growth for an area and company which creates competitive advantage. Because we are in this thesis talking about areas and cities that provide skilled and educated labor force Porters arguments support having this criterion included in the analysis.

The area should be able to provide enough skilled graduates and already established base of skilled and experienced workforce. This is gained from already established companies, when the employees seek new employers and from education centers which provide graduates for labor markets. As it is very difficult to evaluate the overall abilities of a labor force in a single area, the methods of analyzing an area by criterion will be; the amount of education centers and possibly their reputation, possible researches on the subject and evaluation of willingness of companies to hire people from the area. The amount of innovations originating from the area can also be considered as a factor, because according to Porter, as discussed in chapter 2.5.6.1, skilled labor force provides innovations.

3.2.2 Salaries

Salary and related costs are crucial for a company when calculating expenses. If possible, company will try to decrease the salary related expenses as much as it can while still keeping the skills and motivation of the employees high. Competitive advantage can be gained through lower expenses, however, Porter argues that this is not sustainable growth and the advantage will wear off in time Porter did argue mostly, that this applies in comparison between countries of cheap labor and highly educated labor. In this thesis, we are comparing areas that have relatively high resemblance towards each other, and none of these areas can be classified as a cheap and uneducated labor area, as e.g. India is.

Salaries will be included in this study to gain a concrete figure which can be utilized in marketing a certain area. As stated in the competitive advantage theory, companies can form competitive advantage by reducing costs. Companies will be drawn to areas where they can get the same output with cheaper prize.

There are reasons why some areas have lower wages than in other. The areas with higher wages probably have higher concentration of companies, and employees, which leads to them having to compete against each other for the most highly skilled labor.

Wages will be compared using the newest information available found from the areas using the information of the same year from each area, if possible.

3.2.3 Popularity of a location

Surroundings are important for the companies because companies can utilize the right kind of environment to create competitive advantage. A known location where other companies have opted to go works as a proof that the area can suit the needs of similar companies. It lessens the amount of needed research and they will find surroundings that help them to create competitive advantage. According to Tommi Mikkonen, companies will strive to go to same areas as other companies, avoiding areas that do not have other similar companies. (Interview 2.2.2012)

According to Porter, surroundings with a lot of companies in the same industry create an environment that enhances the competitiveness of the companies residing in such an area. This important for the areas to create environments like these, as these kinds of surroundings lure companies to them and increase the popularity of such areas.

Selected areas will be analyzed by the amount of companies in them, amount of cluster programs, amount of education center and amount of supportive institutions. Also, any information about the general popularity of a certain area is available will be used, if available. However, already mentioned factors should be a good indicator of popularity.

It is hard to gain practical knowledge on the popularity or how well known a certain area is, without sending questionnaires to companies. This method is not utilized in this thesis. Analyzing these questionnaires and creating them would be too much for this thesis, because of time constrains and it would put too much focus on this criterion. This could be done as a separate research, investigating the popularities of certain areas and map the reasons why they are popular in companies minds.

This Criterion was excluded from the evaluation, as it was really hard to gain practical knowledge on the popularity. This criterion should be kept in mind, as it is really important for the companies.

3.2.4 Research activity

Research activity is a good source of innovation for companies, which they need to keep up with the international competition. Research activity creates competitive advantage for areas because it draws companies to them. According to Tommi Mikkonen, research activity in an area is crucial for companies that seek an area to set up their business. (Interview 2.2.2012). Research activity provides innovation which is crucial for companies to create competitive advantage and sustain it.

Supportive institutions that offer guidance and support to companies in various ways i.e. subsidiaries, research funding, advice etc are an advantage for an area too. The institutions help the companies directly or indirectly to reduce their costs, which makes the area more appealing for the companies. These kinds of institutions are not necessarily good for the area, because they twist the

competition according to Porter and Porter argues that real competition creates real competitive advantages for companies. However, these kinds of institutions are a good way of luring companies to certain areas and creating short term competitive advantage over competing areas.

This Criterion was excluded from the evaluation regarding the support institutions; research activity measured by university research still remains in this study, as it was really hard to gain knowledge of the institutions working for the areas and their practical services. This criterion should be kept in mind, as it is really important for the companies.

3.3 Information used for evaluation

The information used for salaries was the average salary of ICT industry of the overall average salary of the area. Using the salary of ICT branch would have been optimal, but the specific salary was not found for some areas, so the overall average salary had to be used.

Information used for education is the amount of students in the area. The amount of potential students contributing to ICT industry would have been difficult to measure, as different institutions define degrees differently, and have variations in the statistics. The overall amount of tertiary students gives an idea which town has focus on students, which leads to skilled workforce.

Regarding the research activity, only major universities in the areas were taken into account, as the research activity is very spread out in the areas. Gathering information and making a clear and objective view of these would be very time consuming and would probably take too much emphasis with this study. It would require a study of its own.

4 Selection of the areas

4.1 Forewords about the selection of areas

For this thesis three areas selected to be compared to Tampere central region. The towns were selected because of their focus on ICT sector, size and location. Also, one of the interviewed experts recommended few areas that reflect Tampere central region. The areas were restricted to only three, because of time constraints and this amount can be considered to give an idea what Tampere central region can do better or where it has an advantage. Further investigation by increasing the amount of areas, and broadening their location, could be done.

The selected towns have a notable focus on ICT. This is because the point of the study is to compare the competitiveness of Tampere central region in the attractiveness of ICT companies specifically. The capital areas were excluded in this thesis, as it was decided that they are too special compared to other areas.

The size of the areas was kept around the same as what Tampere central region is to have more relevance in this comparison. The exception is Dresden, which has about 150 000 residents more. However, one must note, that most of the ICT activity resides in Tampere, which makes the difference to be about 300 000. The point of including Dresden in this comparison is to have a very successful ICT focused area as an example comparison counterpart. Tampere cannot compete with Dresden in size, but Dresden can provide example to which should be striven for to gain growth like Dresden has.

Location was decided to be in northern Europe, more specifically in the Baltic Sea region. The reason for limiting the area where the areas or towns were selected was to have similar areas or towns in this thesis. Selecting the areas or towns from too far away might have diminished applicability of this study, because the areas or towns too far away might have been too different environments or cultures and they might utilize completely different competitive

advantages. Further studies could be made by comparing Tampere central region to areas or towns further away or even to locations across the world.

In the next chapter the three areas are described why they have been selected and also overall information on the areas is given. There will be a chapter giving general information about the Tampere central region.

Some of the information will be used from the town itself or from the state or region, depending on what information is available.

4.2 Information about the selected cities

4.2.1 Dresden

4.2.1.1 General information on Dresden

Country: Germany

State: Saxony

Population: 515 842 (2008)

Area: 328,8 km²

(City of Business and Science Dresden 2009, 153)

As stated previously, Dresden was chosen to be an example of how things should be. This is the hypothesis for Dresden and the result may or may not agree with what is presumed. Dresden is by far the biggest area of the selected ones, and probably the most well know among international companies.

4.2.1.2 Salaries

Average salary for a person working in ICT in Saxony, the whole state, is 3656 Euros per month and 44 000 Euros a year in 2011. Information for Dresden was

not found. However, we could assume that it is a bit higher, as it is the centre of ICT for the whole region.

(Sachsen. Statistik. 2012)

4.2.1.3 Education

Dresden has students altogether around 42 000 thousand and of these 36 534 in 2010 study at the technical university of Dresden and 5 193 at the university of applied sciences, in 2008. People with tertiary education are altogether 31% of the population in 2009.

(Forschungsbericht. TU Dresden, 2011)

4.2.1.4 University research activity

Research in Dresden is provided by the technical university of Dresden (Technische Universität) and the University of Applied Sciences (Hochschule für Technik und Wirtschaft Dresden). Technical university provided 81 patents and 6000 publications in year 2008. University of applied sciences provided 8 patents and 400 publications in year 2008. Altogether this makes 89 patents and 6400 publications.

(Forschungsbericht Hochschule für Technik und Wirtschaft Dresden, 2011)

(Statistischer Jahresbericht, TU Dresden, 2011)

4.2.2 Malmö

4.2.2.1 General information on Malmö

Country: Sweden

Population: 300 515 (2010)

Area: 335,14 km²

(Malmö snapshot. 2012)

Malmö is a town that fits the criterion selected for including an area to this study well. Malmö is an important ICT town for Sweden, they have a lot of research activity and lots of companies reside there. Malmö is almost the same size as Tampere central region but as stated previously, the main ICT activity is inside Tampere. Malmö is a somewhat similar place compared to Tampere central region. It is located a bit further in south than Tampere central region, which might make it a bit more known to European companies.

4.2.2.2 Salaries

Average salary in general is 2700 Euros per month in 2010 and using the exchange rate of 31 December 2010. The general average salary was used because the average salary for ICT was not available. (Statistics Sweden, 2011)

4.2.2.3 Education

Malmö has the University of Malmö, which has 24000 students. In Malmö the amount of people with tertiary education is 38% in 2010. (Snapshot Malmö. 2012)

4.2.2.4 Research activity

Number of publications from the Malmö University is 250 in 2010. This might seem low, but Malmö has a lot of research scattered over different institutions. As previously stated, we do not take them into account; however, one must not ignore the effect they have in general.

(Åresredovisning högskola Malmö. 2011)

4.2.3 Trondheim

4.2.3.1 General information on Trondheim

Country: Norway

State: Sør-Trøndelag

Population Trondheim: 176 348 (2012)

Area Trondheim: 342,30 km²

Population Sør-Trøndelag: 284 773 (2008)

Area Sør-Trøndelag: 18,848 km² (2008)

(Statistikbanken, 2012)

Trondheim is an important ICT center in Norway, having important education centers which provide important research activity and many ICT companies reside in Trondheim. Trondheim itself is a bit smaller than Tampere central region but the whole Sør-Trøndelag area about the same size, Tampere central region is a bit bigger. Trondheim is a somewhat further away from central Europe compared to Tampere central region, but it is good to have one city that is about as far as Tampere central region is physically away from central Europe.

4.2.3.2 Salaries

Overall average salary in Trondheim is, after taxes, is 5000 e/per month, using the exchange rate of 31.12.2011. The general average salary was used because the average salary for ICT was not available.

(Statistikbank Norway. 2012)

4.3.3.3 Education

Trondheim has one of the biggest universities in Norway, NTNU, hosting over 20 000 students. Trondheim and Sor-Trondelag region also has the second biggest university in Norway, HiST, which hosts 7500 students.

There is also the Bi Business School Norway, however, the school is scattered around Norway and its main campus is in Oslo, so the school is excluded from the study.

(HiST. Publications, 2012)

4.3.3.4 Research activity

NTNU provided nearly 2400 publications in 2009. HiST provided 7 publications in 2009.

(HiSt, publications, 2012)

4.3.4 Tampere Central Region

4.3.4.1 General information on Tampere central region

Country: Finland

State: Pirkanmaa

Population for Tampere Central Region: 356 826 (2010)

Area: 4 550 km²

Population in Tampere: 213,274

(Toimintaympäristö: Tampereen Kaupunkiseutu.)

Tampere Central Region is an area, that includes 8 different municipalities; Tampere, Ylöjärvi, Nokia, Lempäälä, Orivesi, Kangasala, Pirkkala, Vesilahti. Tampere central region is the main area of this study. The previous areas will be compared to Tampere central region to find out where Tampere excels in competitiveness and what should be improved in Tampere central region.

4.3.4.2 Salaries

Average ICT salary in Midwest Finland is 3881 Euros per month. Average salary paid by municipality and private sector was not found for Tampere or for Tampere central region.

The average for taxable income was 25 451. This is not comparable directly to salary, as it includes people who gain social benefits, and it has been tax deducted. This value is much lower than the salary paid, because of it including really low income households. This makes it really hard to be compared directly to any average salary paid.

(Toimintaympäristö: tulot ja varallisuus)

4.3.4.3 Education

Tampere central region has three big universities, TAMK University of Applied Sciences, University of Tampere (UTA) and the technical University of Tampere (TUT). People with tertiary education is 32,4% of the population. (Tilastokeskus, 2012.)

Tampere central region has tertiary and higher level students in TUT 10 470 in 2011, in TAMK 9793 in 2011 and in UTA 15 643 (2010). It should be noted that UTA numbers are one year behind so we cannot directly calculate all the students together. However, we can make an approximation that is accurate enough for the purpose of the study. The approximation used for this study is 36 000. (Tampereen teknillinen yliopisto Vuosikertomus 2011, 2011.)

4.3.4.4 Research activity

TUT had 2026 publication in the year 2011. (Tampereen teknillinen yliopisto Vuosikertomus 2011, 2011) and UTA had 2235 publications in 2010.

There are 50 development projects at TAMK going on at the moment. TAMK has very few publications and exact information about these was not found for this study.

5 Evaluation and comparison of the areas

5.1 Forewords

In this chapter the comparison between Tampere central region and the selected towns will be done. There will be a short overall description of the situation in the both towns and after that utilizing the previous chapters, the theory, the criteria and the information provided towns will be compared. Criteria will be analyzed one by one and then there will be a general conclusion about the competitive situation. After all the towns have been compared to Tampere central region there will be an overall conclusion.

The three main criteria mentioned in the previous chapter will be taken into account with each city. There might be some additional details, for example, location, language and culture. However, the three main criteria will form the major part of the comparison and they will have the biggest effect on the overall result. There might be some small difference in the major criteria between comparisons. This is because some information was not available for each town, or the information varied greatly.

The data gathered for this study varies quite a lot regarding each city. Some of the data was not available in some of the cities and the way the data was expressed varied. It will be mentioned specifically how the data in question was presented in the areas compared to Tampere and what effect does it have to

the comparison. Because the data varies, direct comparisons might not be reasonable; some of the points made here are only giving an idea of the situation. These kinds of points are applicable but one must handle them as more or less guiding than directly comparable hard facts. Mostly problems arose with the year the information was available in. In some cases the information was few years old and equivalent year was not found regarding Tampere Central Region. In this case we must be aware that changes have happened, however, if we assume only minor changes, we can see the overall situation regarding the point.

We must also consider the fact that different institutions present their material in a different way, and some of the figures have been calculated differently. Some figures in some institutions might include factors that others have neglected. Because of this, one must be very careful to draw direct conclusions.

The salary data in this study will give an idea which area has the cheaper workforce. It must be acknowledged that there are other expenses to companies than just the salary when they hire employees, but they were excluded from this study, as it was really hard to find such information. The average salary will still give an idea which area has the cheaper labor force.

Education as itself and what is aimed to be measured by it are things that cannot be seen as hard values. The educational numbers here try to give an idea of the skill level of the employees, as it is important factor for the competitiveness of a nation, which has been discussed in chapters regarding the theoretical aspects on competitiveness of nations. Education also gives an idea of the innovation potential of the area. Skill level of the employees and especially innovation potential are very vague concepts, so even if data can be compared directly, it is still quite ambiguous which area truly has the most skilled labor force and more innovation potential. However, this study assumes that these educational numbers give results regarding innovation and skill levels. Education also measures the potential amount of skilled labor force to be available.

There are other research centers and other institutions scattered all over Tampere central Region, Dresden, and Saxony. However, their purposes vary very much that it is hard to figure out which of them offer relevant help for companies and especially for ICT companies. Also, it was nearly impossible to map these kinds of institutions and gather information about them. It could be done as a separate research, and when done, it would give an excellent point regarding competitive edge of a certain area.

Some cities have naturally more students than others and this is most likely caused by the fact that some cities have more residents than others and offers more education. In this study it should be compared how many tertiary students there are in relation to the amount of population, to gain an idea which town has more focus, in relation, to tertiary education.

5.2 Tampere Central Area and Dresden

5.2.1 Salary

Salary data was found for ICT for the both areas. There is difference in the data sample which means that the salary data is not directly comparable. The salary data was found for western Finland and for Saxony. We could assume that the salaries for Dresden are higher than the overall salary in Saxony, as Dresden has the highest concentration of ICT companies, which means higher competition for workforce. Same assumption does not necessarily apply to Tampere central region in the light of the data about western Finland, as there are other major cities and ICT centers. However, we could also assume that the centers have a bit higher salaries than other areas inside western Finland.

The average salary in Western Finland was around 3881 Euros per month, which means 46572 Euros per year. In Saxony salary was 3656 Euros per month and 43872 Euros per year.

It can be seen from this that Saxony area has lower salaries than Western Finland. It could have been assumed that Dresden and Saxony had higher salaries because of high concentration of ICT, as discussed previously in theory part of this thesis, but the results differ. This might be caused by Dresden being in Eastern Germany, which has overall lower salaries than in Western Germany (Deutsche Welle, East–West pay gap persists decades after reunification). Finland is also one of the most expensive countries in Europe. (Tilastokeskus, Kansainvälinen Hintavertailu 2010) This will affect the salaries in Finland quite directly and will explain the salary difference between the two areas, even if it is against expectations.

Overall, Saxony has lower salary than Western Finland, which works as a competitive advantage for Saxony and Dresden. Tampere Central Region and western Finland cannot compete with areas such as Saxony or Dresden regarding salary in the current situation.

5.2.2 Education

Education data was found for Tampere Central Region and Dresden specifically. In this case we are able to make quite direct comparisons between the education factors in the two areas. However, it must be remembered again that there might be differences between institutions and how they record and publish their data. This will lead to the fact that we have to treat this factor as it would only give us relative information.

Tampere Central Region has third and higher level students 36 000. Dresden has 36 534 students studying at technical university of Dresden, in 2011 and 5193 students at the university of applied sciences. Same things apply as for Tampere Central Region. There is a major gap in years in which information was gathered, but for the purpose of this study we can make an approximation which should be accurate enough.

In an estimate, Tampere Central Region has 36 000 students in 2011. Dresden has 42 000 students. It should be noted, that a part of these students are not studying something that would directly contribute to the ICT labor force, but because the definition of degrees vary between different regions, it would be hard to separate the students who potentially contribute and who do not.

The percentage number for Dresden is 8% with the population of 2010. For Tampere this percentage is 10% with the population of 2012. It seems that Tampere Central Region has more tertiary education than Dresden in relation to population.

31% of the people In Dresden have tertiary education. In Tampere 32,4% of people have tertiary education.

5.2.3 Research activity

For the research activity only the major universities were included. The research activity is measured by the publications the universities produce because this was almost only one universal piece of information regarding research found in every university taken into account in this study. Comparing publications directly will give an idea of how much research activity there is inside the university. The research activity is key essential for companies that look for a city to set up their business.

Dresden provided 6400 publications in year 2008. TUT had 2026 publication in the year 2011 and UTA had 2235 publications in 2010. Again there is the problem of the gap in years. However, already from this data we can see that Dresden has somewhat larger amount of publications. This means that Dresden has more research potential for companies setting their business there than Tampere central region has to offer. This will create competitive advantage for Dresden.

It should be noted, that too much help for companies does not necessarily translate into competitive advantage. However, because in this study research activity is one of the crucial points, we can assume that this translates into direct competitive advantage.

5.2.4 General situation

Dresden has almost everything better than Tampere Central Region. The only point that Tampere Central Region fares better at, is the relative amount of students studying for tertiary degree. This will theoretically translate into competitive advantage in the future, because highly skilled labor force brings innovation. If companies, of which size is in relation to the size of the area, set up their offices here, we could assume that the amount of tertiary degrees would translate into a competitive advantage. Overall situation is that Dresden is more competitive area than Tampere for an ICT company.

5.3 Tampere Central Area and Malmö

5.3.1 Salary

The exact salary for ICT in Malmö was not found for this study. In this chapter we will compare the overall average salary of Malmö to the average salary of Tampere. This will not give provide very accurate information regarding the ICT itself, but we will still be able to see which area is cheaper for the companies regarding salaries. We can have quite direct comparison with the average salaries in this part, but as the exchange rate between Swedish kronor and euro fluctuates all the time, the relevance might not be as direct.

Exchange rate also provides some other potential competitive advantages for a company residing in Sweden. However, it has its potential negative sides too. Porter argues that these kinds of advantages are not sustainable. Exchange related competitive advantages and disadvantages will be excluded from this study, even though they are very relevant regarding business decisions.

Average salary in general is 32 400 Euros per year in 2010 and using the exchange rate of 31 December 2010. As only the average income after taxes is known in Tampere, which is 24 541 we cannot really compare the two figures. However, in an estimate, after adding taxes and removing the lowest income class of the Tampere region, it could be assumed that the figure is very close or a bit higher than in Malmö.

5.3.2 Education

Education data was found for Tampere Central Region and Malmö specifically. In this case we are able to make direct comparison between the education factors in the two areas. However, it must be remembered again that there might be differences between institutions and how they record and publish their data. This will lead to the fact that we have to treat this factor like it would only give us practical macro level information, but there might be differences with smaller details.

University of Malmö has 24 000 students. Tampere Central Region had 36 000 students. It should be noted, that a part of these students are not studying something that would directly contribute to the ICT labor force, but because the definition of degrees vary between different regions, it would be hard to separate the students who potentially contribute and who do not.

The percentage of students in Malmö is 8% and Tampere Central Region 10%. Tampere Central Region has higher focus on tertiary studies than Malmö.

People with tertiary degree of population is 38% in Malmö, and 32,4% in Tampere.

5.3.3 Research activity

Research activity in Malmö University is 240 publications per year. This is a very low amount, but there are many other research institutes in Malmö. They are not taken into account in this study, as they are very scattered, especially the Öresund University network which is scattered around Oresund region. Öresund University network offers quite much research, but it would be very hard to pinpoint what kind of an effect it has exactly in the Malmö area. As it is hard to pinpoint, we will exclude it from the study.

Tampere Central Region offers much more research activity compared to Malmö in this situation. However, practical research activity and the university activity might be quite different. If an in depth research was to be made it would give much more practical information and excellent points.

This result will not affect much to the overall comparison, as the facts might be quite shallow.

5.3.4 General situation

Tampere Central Region is very close to Malmö. Salaries are very close, with only little distinction, given the already made assumption.

Tampere Central Region is more focused in students than Malmö, but Malmö has more people with tertiary education. This can mean that Tampere Central Region might have more people with tertiary education than Malmö in the future, but as it stands, Tampere Central Region has less. This is a competitive advantage for Malmö

Tampere Central Region has more research activity than Malmö.

Overall, Tampere Central Region has advantage regarding the research activity, but otherwise the two areas are very close to each other. It can be said that Tampere can offer almost the same amount of skilled workforce as Malmö for similar prize, so Tampere Central Region has the competitive advantage.

5.4 Tampere Central Region and Trondheim

5.4.1 Salary

Overall average salary in Trondheim is, after taxes, is 5000 e/per month, using the exchange rate of 31.12.2011. There was already discussion about the effects of exchange rate in chapter 5.3.1 and same issues apply to Norway and Trondheim.

Norway is known for its high salaries and high prizes. It is quite likely that salary expenses are higher in Norway compared to Finland. As we only know the average income after taxes in Tampere we cannot really compare the two figures. However, we can assume that the average salary paid is not double the amount of average income.

5.4.2 Education

Education data was found for Tampere Central Region and Trondheim somewhat specifically, except for the overall tertiary education level for the people in Trondheim. In this case we are able to make quite direct comparison between the education factors in the two. However, it must be remembered again that there might be differences between institutions and how they record and publish their data. This will lead to the fact that we have to treat this factor like it would only give us guiding macro level information and also there might be differences with smaller details. There are some marginal education centers in Trondheim, but they were very small or scattered institutions all over Norway that they were excluded.

Trondheim has 27 500 students studying in two different institutions. The NTNU has 20 000 students and HiST has 7500. Tampere has 36 000 students overall in year 2011.

The percentage is 10% for Tampere Central Region and 16% for Trondheim. Trondheim has relatively more focus on tertiary education.

5.4.3 Research Activity

NTNU provided nearly 2400 publications in 2009. HiST provided 7 publications in 2009. TUT had 2026 publication in the year 2011 and UTA had 2235 publications in 2010. Again there is the problem with the gap in years.

Tampere Central Region offers much more potential research opportunities for companies, which will work as a competitive advantage for Tampere Central region.

5.4.4 General Situation

Trondheim has much more focus on Students and education than Tampere Central Region, which will potentially translate into skilled and innovative workforce. However, Tampere Central Region has more students overall, so it might compensate for the loss in focus. Tampere Central Region has more research activity which will draw companies here, and it will directly work as a competitive advantage for Tampere Central Region.

Trondheim has, in an estimate, larger salaries than in Tampere Central Region. This will act as a competitive advantage for Tampere Central Region. However, high salary might lead to skilled work force being drawn to Trondheim. In this case it should be mentioned, that Norway is very expensive country, and the salary might not directly translate into higher purchasing power compared to the salaries in Tampere.

Trondheim has some advantages compared to Tampere Central Region. Which area is more competitive depends on what the companies want when they think about the location they might want to go. Tampere Central Region offers more research potential, so companies that want co-operation with universities might want to choose Tampere Central Region. Tampere can also provide skilled workforce with lower wage than Trondheim.

5.5 General analysis on competitiveness of Tampere Central Region

Tampere Central Region has some strengths and weaknesses compared to the other areas. These points will be presented in this chapter as a SWOT, strengths, weaknesses, opportunities and threats, analysis. Some of the criteria could not be analyzed throughout, because of lack of information.

Strengths of Tampere Central Region lie in its research activity. Only Dresden could match the amount of research done here in Tampere Central Region. Tampere Central Region also has very strong focus in students and educated workforce. According to Porter's theory on competitiveness of nations, Tampere Central Region has strong competitive advantage in innovation potential and it is sustainable, because Tampere Central Region has a lot of focus on students and education. Salaries in Tampere area are a bit above average, which does not necessarily translate into competitive advantage, unless competing with the high salary areas. However, Tampere Central Region can offer high skilled labor force with an average salary, which is a competitive advantage.

The opportunities of Tampere Central Region are in good amount of research and educated labor force. Tampere Central Region can offer companies skilled labor force with lower salaries than most of the areas. This combined with research could offer potential for Tampere to create an innovation and research environment for companies.

The main weakness in Tampere Central Region is that some of its competitors do most of Tampere Central Regions strengths better. Dresden

especially can offer more research and cheaper skilled labor force. However, Dresden and Saxony are bigger areas than Tampere and Tampere Central Region, which gives it more volume in research, and Tampere Central Region cannot necessarily compete with larger areas, except maybe in niche areas.

Threats for Tampere Central Region are mostly related to some other areas being better known, and not being able to distinguish itself as a good place in general. There can be some niche areas where Tampere Central Area can distinguish itself, but if Tampere Central Area wants all kinds of companies, not just niche companies, of ICT branch to settle here, it can be difficult as there are areas that manage to surpass competitiveness of Tampere Central area on a general level.

6 Conclusion

The study was conducted because of the recent changes of ICT industry inside Tampere Central Region. The ICT industry is going through massive structural changes, because of major companies' strategic changes. Tampere Central Region needs more companies to be able to achieve growth and offer jobs for professionals in the field. The reason why this study was conducted was to gain an idea of how competitive Tampere Central Region is when ICT companies decide to locate an office somewhere. When Tampere Central Region has an idea where they are more competitive than other similar areas, they are capable of enhancing their marketing points, and gain information on what should be improved to gain competitive advantage. The study also provided theoretical information on what makes an area competitive, which can be utilized to increase the competitiveness of Tampere Central Region.

The study managed to give a relative idea what is good and bad compared to its counterparts. Tampere Central Region has some competitive advantages compared to the selected areas. It would seem that other areas have clear advantages over Tampere Central Region, in the light of the criteria selected for this study. There is a lot to improve here in Tampere Central Region, but there

are definitely points that can make an ICT companies interested in Tampere Central Region. Education and research are one of the strongest points that Tampere Central Region has. Salaries vary; there are differences inside the areas, and Tampere Central Region is somewhat above average.

It should be noted that there are a lot of psychological factors determining the decision making of managers (Mikkonen, Interview 2.2.2012). They have their own ideas and mental images of areas, which affects their decision making. The hard analytical data supports their decision making, but the mental images the managers have might have a huge impact on their final decision. It might even be that the psychological factors surpass the analytical data in their decision making. Already in this thesis it was mentioned that one of the most important criterion for companies was the popularity of the region, which is, to a certain degree, a psychological factor.

In this study there were many aspects left out. Even the three criteria that were used and analyzed in this study were only scraping the surface and there is a lot of further research potential in each of these. The psychological and popularity related aspect were the main aspect left out, even though they are major factors in this study. They were left out mostly because of measuring them would have been difficult, and they differ quite a lot from the other criteria discussed in this study.

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APPENDICES

Interview Questions

1. What are some critical criteria for companies when they think about moving to a certain location?
 - a. Which ones of these criteria are the most important?
 - b. Why are these criteria so important?
2. Which areas resemble Tampere Central Region regarding ICT branch?
3. Which ICT branch is most important for Tampere Central Region