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Airports as cities- the concept of aerotropolis applied to Helsinki-Vantaa International Airport.

Dominika Klos

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Abstract

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Author Dominika Klos	**Group or year of entry** 2009
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Supervisor Dr. Mário Passos Ascenção	

Airports of today are experiencing a great business evolution. Additionally to their primary aeronautical services, they have developed a significant amount of non-aeronautical services and gaining a large share of revenues coming from non-aviation industry. The changes concern also airports' direct neighboring area. The new model of airport urban planning puts an airport in the center and allows to build up variety of businesses and venues around it.

This thesis explores the concepts of airport city and aerotropolis in relation to Helsinki-Vantaa International Airport.

The primary aim of this research is to elaborate on the concept of aerotropolis and generate a theory which situates current status of Helsinki Airport and its urban area. The method used for the purpose of the study is grounded theory via semi-structured interviews with experts from the aviation field and managing bodies directly responsible for the development of the Airport and its urban area.

Gathered data was strictly evaluated according to grounded theory research process model, and supported by adequate literature review. The theory part presents in depth and complex analysis of aerotropolis phenomena and a full profile of Helsinki Airport.

The project resulted in theory, which situates the Airport as fully functioning airport city. Also, because of rapid development of its urban area, Helsinki Airport is on a way to become one of world's well-functioning aerotropoli. Generated theory has not been tested, therefore this research paper results in opening the discussion in studied matter and creates ground for further studies in this topic. In conclusion, some suggestions and recommendations for future studies are also presented.

Keywords
Helsinki Airport, aerotropolis, airport city, grounded theory, urban expansion

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1 Introduction

1.1 Background of the topic

The traditional function of an airport is to manage the transport of passengers and/or cargo on the aircraft to another airport destination in fast and efficient way. However, even the primary aim of any airport is still the same, some major changes in airports operations and functions have changed throughout the years. According to Kasarda "airports represent the 'fifth wave' of changes in the transportation infrastructure that have shaped commercial development over the past three centuries: the first being seaports; the second rivers and canals; the third, railroads; and the fourth, highways" (Kasarda 2001 in Unisys 2008, 4).

Airports at the present are experiencing a great business evolution, additionally to their primary aeronautical services they are developing a significant amount of non-aeronautical services and gaining a large share of revenues coming from non-aviation industry. They are also becoming "vital economic and urban operators that are drawing an even larger part of their income and profit from real estate and commercial business on their own property" (Hyer 2013, 2). The new model of airport urban planning puts an airport in the center and allows to build up the variety businesses and venues around it. The airport, in this case is called "the airport city" and the whole concept is referred by scholars as aerotropolis planning. This relatively new phenomena was introduced and described by Kasarda (2001) in his article "*Logistics and the Rise of the Aerotropolis*" and become highly popular among airport urban planners. Some of the world's major airports started to adapt this model and few new airports were build up from the scratch according to the aerotropolis model plan, for instance South Korea's Incheon Airport. Kasarda, as the world leading specialist in this matter, has published a number of articles that elaborate on the characteristics of aerotropolis. Recently, Kasarda and Lindsay (2011) published *Aerotropolis: The way we'll live next* (2011), which goes into details about world's operational aerotropolis and gives the world a clear understanding of this urban trend.

The status of aerotropolis and airport cities which are operational and also those which are under development has been published on the website which is the main source of aerotropolis information: aerotropolis.com. Dr. Kasarda with a number of specialists, thanks to their qualitative knowledge in this subject and their quantitative research, frequently update the number of airports which are or are aiming to become the aerotropolis. According to the latest publication from 2013 there are 25 operational aerotropolis, 20 operational airport cities, 26 developing aerotropolis, and 13 developing airport cities.

Among others, Helsinki-Vantaa International Airport (IATA: HEL) has been listed as one of the operational and fully functioning aerotropoli. As Finland's main international airport it connects more than 120 destinations worldwide, had over 14 million passengers in 2013, transported over 192 tons of freight and mail, and aims to maintain its competitive position in transit connections between Europe and Asia (Finavia 2014). It is also a hub for connecting and long-haul flights of national carrier Finnair. With its international business park, Aviapolis, on the area of 42 sq km surrounding the airport with a number of businesses and hotels inside, the airport is an attractive place for employment, expanding the business and for start-up new company.

1.2 Research problem

The primary aim of this thesis is to elaborate on the concept of aerotropolis and evaluate it on the example of Helsinki-Vantaa International Airport. There are no similar studies available which explore this concept in terms of Finland's biggest international airport. Also growth of the airport has influenced a great transformation of capital's urban area, which has not been researched so far. Thus, the purpose of this research is to answer the following questions:
Is Helsinki-Vantaa International Airport a functioning airport city and/or aerotropolis?
Which features are characteristic for the aerotropolis?
What are the predictions for the future in terms of urban expansion for the Airport?

This study will also cover the issues of:

- airport's accessibility in the catchment area

- businesses around the airport
- noise and emission issues in relation to residential area
- sustainable "smart growth" of the airport.

1.3 Justification for the thesis

In Amsterdam Schiphol Airport, world's first designed aerotropoli, the Dutch planners tend to say:

> The airport leaves the city.
> The city follows the airport.
> The airport becomes the city.
> (Kasarda 2011a, 20)

This saying briefly describes the evolution in airports urban planning. According to Clapp "a combination of giant airport, planned city, shipping facility and business hub, the aerotropolis is at the heart of our next phase of globalization" (2012, 54). This explains how important position the airport cities host in terms of global development and international business connections. The businesses which are located the closest to airport have the competitive advantage to connect their products and specialists much faster with the global marketplace (Kasarda 2011 in Clapp 2012).

While looking into actions which were undertaken to expand the Helsinki-Vantaa International Airport and its neighboring urban area- Aviapolis, it appears that the managing bodies are using the model of aerotropolis. The Airport's development programme planned for 2014-2020 expected to spend about 900 million euros is about to increase the number of passengers up to 20 million per year, creating about 5,000 permanent jobs in the companies located at the airport (Finavia 2014d). While expanding Aviapolis, with its fast rail line to be completed in 2015, is already a base for 1,100 companies and employment place for 35,000 people, and also those numbers are about to grow (Aviapolis 2014).

This research is designed to create a profile of Helsinki-Vantaa aerotropolis based on the information collected from the managing bodies responsible for decision making processes in terms of Airport's growth and Aviapolis development. Collected data will

be supported by relevant literature review and it is expected to provide a reliable answer to the research questions. The participating bodies will benefit from this study by getting an accurate profile of Finland's aerotropoli, while scholars will have good grounds for their possible follow-up studies.

1.4 Methodology in brief

The method used for the purpose of the research is grounded theory via semi-structured face-to-face interviews with experts from the aviation field and managing bodies directly responsible for the development of the Airport and its urban area.

The objective of the research is to resolve what the main characteristics of Helsinki-Vantaa aerotropolis are. For this purpose the grounded theory was used as a research method with its advantage of gathering rich data from the experienced specialists excluding the influence of the prior knowledge of the researcher. Also, its systematic and rigorous procedure of data collection and analysis allows to justify the most important findings and verify them by using adequate literature review. The interview protocol with probe issues related to airport's functions and development was designed to carry out the interviews, which were carried out from February to April 2014. The theoretical framework has been selected to support the theory of aerotropolis and to present a full profile Helsinki-Vantaa Airport's urban area.

1.5 Definitions

In order to make it clear for the reader, most of the important terms and definitions used in this research paper are explained below. All of them are widely used in the aviation field and their understanding is crucial to comprehend of given research.

Aeronautical and non-aeronautical revenues. Aeronautical revenues are those which are generated by airport infrastructure directly connected with airport's main aim- air traffic. Those revenues include: landing fees, take-off fees, aircraft parking, passenger taxes, apron services, aircraft handling, freight charges, and gate leases (Kasarda 2008, 3). Non-aeronautical revenues, on the other hand, generate higher profit margin and de-

fine financial feasibility of an airport. The sources of non-aeronautical revenues are: concessions (rents paid by shops, restaurants and other services at the airport), parking charges, land rent (for instance used by hotels, office buildings, leisure facilities), and advertising (adds, billboards, other commercial campaigns) (ACI 2013b).

Hub airport is the airport that airline use as a transfer point in order to get the passengers to their desired destination, it is also a home base for airlines. Hub airports operate in hub-and-spoke system. The aim of this concept is to "concentrate traffic to one airport- the major hub from smaller national airports (known as the spokes) or other means of transport, and then the gathered group of passengers would be transported from the major hub to another major hub" (Bontekoning 2006).

Catchment Area. To define catchment area the time measures have been taken under consideration. According to Civil Aviation Authority the range of airport's catchment area can be defined by the amount of time needed to travel to an airport. Also "airlines and airports, along with industry analysts, have stated that they asses the population distribution and economic activity within a certain distance or travel time to the airport" (CAA 2011, 7). Airports catchments areas may overlap, which means that airports compete to attract those inhabitants who have roughly equal travel time to each airport. CAA states that "geographic market definition analyses the area over which passengers would substitute to other airports in light of a small but significant non-transitory increase in price of 5 to 10% above the competitive price level at the original airport" (2011, 4). However, despite the travel time airports may differ also in services they provide, which can limit the competition.

The Airport City "is grounded in the fact that in addition to their core aeronautical infrastructure and services, major airports have developed significant non-aeronautical facilities, services, and revenue streams. At the same time they are extending their commercial reach and economic impact well beyond airport boundaries." (Kasarda 2008, 1) The airport city is a central part of aerotropolis; it is an airport with all the facilities and services developed in a way that it can function as well developed city agglomeration.

Aerotropolis is a new urban form which is built from the airport city as a core and outer areas with aviation-oriented businesses (Kasarda 2008). The area surrounding the airport includes the infrastructure and the services which can be found in a regular city, such as logistic facilities, office buildings, residential area, leisure and entertainment services, hotels, schools, hospitals, etc. The area is characterized also by outstanding connectivity via highways, rail and extensive public transportation.

Urban area can be defined as "spatial concentration of people whose lives are organized around nonagricultural activities" (Weeks 2010, 34). It consist of few components, such as population size, density, land area, economic and social organization (Weeks 2010).

Sustainable growth according to economists is "a rate of growth which can be maintained without creating other significant economic problems, especially for future generations" (Economics Online 2014). To the advantages of such growth belong higher GDP per capita, higher employment rate, more public and merit goods, environmentally friendly development, new green technologies, low-carbon economy, and bigger share of renewables in energy consumption (European Commission 2012).

1.6 Structure of the thesis

This thesis is structured as follows: chapter 2 elaborates on the philosophy of research. The concept of "research onion" is presented and discussed in detail, including justification of researcher's choices related to this research. Further on, genealogy of the grounded theory is presented, followed by research process and data analysis. The chapter concludes with description of interview as data collection tool. This study is constructed slightly different than guidelines for Haaga-Helia bachelor thesis suggest, due to the nature of grounded theory. The literature review, upon which this study is based on, is a result of chosen research method. Thus data analysis and results come in chapter 3 based on results gathered from the interviews. Since constant data collection and analysis were supported by theoretical data collection, structure of the report must be the following: research methodology, data analyses and results, and theoretical framework, presenting the concepts of airport city, aerotropolis and full profile of Hel-

sinki Airport based on various sources. Lastly, this thesis is concluded with limitations, ethical considerations and future research recommendations together with learning outcomes.

2 Research methodology

This chapter elaborates the philosophy of research. In addition it presents which research method was used in the purpose of this study and justifies the reasons for such choice. Later, that chapter introduces the grounded theory as a research method and discusses its structure and characteristics. In the last part the nature of interview is explained followed by introduction of sampling techniques and respondent selection criteria.

2.1 Research position

According to Tesch (1990 in Carson et al. 2001, 61) "the range and scope of research methods is vast". Before conducting the research there are many aspects to be considered when it comes to choice of research philosophy, approach, strategy and method. To illustrate this wide aspect of research, the researcher have decided to use the research "onion" model presented in figure 1. The outer layer of the "onion" presents three major research philosophies: epistemology, ontology and axiology; together with a concept of research paradigms: functionalist, interpretative, radical humanist and radical structuralist.

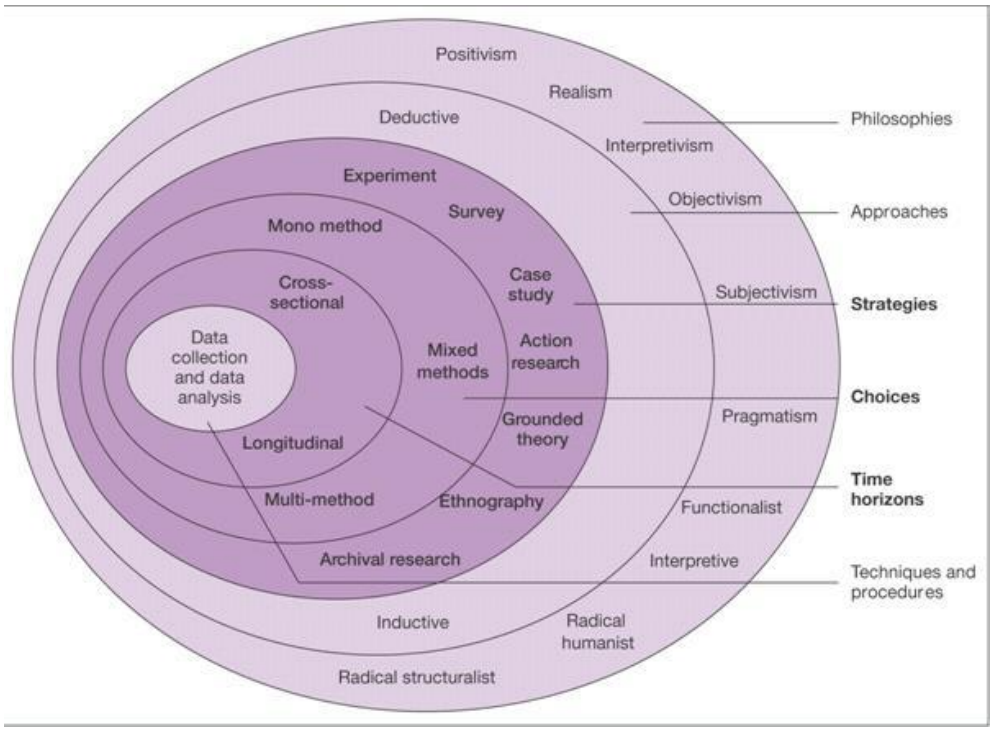

Figure 1. The research "onion" (Saunders et al. 2007, 102)

Referring to research philosophies, epistemology studies the nature of knowledge and the relationship between the reality and the researcher. If the philosophy of study reflects on positivism "there is likely to be an emphasis on theory testing whereby existing theory will be tested in a specific research context" (Carson et al. 2001, 63). This position is also called quantitative research, because it is precise in measuring outcomes, thus is relatively structured and strict when it comes to validity. If the philosophy of research relates to realism, it shows that "objects have an existence independent of the human mind" (Saunders et al. 2007, 104). The third epistemology is interpretivism, which "seek to build theory as a result of empirical insights" (Carson et al. 2001, 63). The interpretivist methodologies (also described as qualitative) tend to answer questions: *how*, *why* and *what* in relation to studied phenomena and include the researcher as a part in a theory building process.

The second philosophy of research, the ontology, studies the nature of reality, which can be objective, subjective or pragmatic. While the axiology studies "judgments about value" concerning for instance ethics or aesthetics (Saunders et al 2007, 110).

For the purpose of this research paper the researcher has decided to adopt the philosophy of epistemological interpretivism, because it puts the emphasis on meaning and understanding. Moreover, it builds the theory based on gathered qualitative data, without excluding the researcher's influence on the study.

The second layer of the research "onion" relates to research approach which is attached to given research philosophies discussed above, and can be either deductive or inductive. The deductive approach rather tests the theory in order to generate observations. It focuses on collection of quantitative data, is highly structured, ensures the validity of data, and keeps the researcher separately from studied theory. The inductive approach, on the other hand, builds the theory out from the qualitative data. It is more flexible with structure, observations "allow the construction of explanations and theories about what has been observed" (Carson et al. 2001, 12). As oppose to deduction, this approach keeps the researcher as a part of the research process. To conclude, since this study is based on gathering qualitative data, the research approach has an inductive character, thus it allows the researcher to contribute in the theory building process.

The research strategy can be defined as "general plan of how the researcher will go about answering the research question(s)" (Saunders et al. 2007, 610). The strategies used in the "onion" model are as follows: experiment, survey, case study, action research, grounded theory, ethnography, archival research. After the researcher has studied the characteristics of each strategy, she has decided that the most accurate for this research would be the grounded theory. Genealogy, structure, data analysis and theory building processes of the grounded theory are discussed in depth later in this research paper.

2.2 Selection and justification of the research method

As explained in the previous section, this study is qualitative, interpretivist by philosophy, inductive by approach and uses grounded theory as a strategy/research method. Thus this research puts emphasis on theory building, meaning, and understanding. It addresses the questions: how, why and what to the research phenomena. The research "onion" shows that grounded theory is rather mixed method, because "it combines

some elements of deductive approach as you seek to develop a theoretical position and then test its applicability through subsequent data collection analysis" (Saunders et al. 2007, 489). However, Carson, Gilmore, Perry and Gronhaug have positioned the GT as predominantly interpretivist method "about people's perceptions that drive their social/marketing behavior, and the epistemology of interpretivism requires that the researcher must be a participant in reality" (2001, 153).

What is more, this thesis should be considered as the exploratory research, due to its emphasis on gathering insights of the studied problem and formulating hypothesis. The aim of exploratory research is "to provide a better understanding of the situation" (Monroe College 2011, 28) and open the discussion for the further research.

When the time horizons are taken under consideration, research can be either cross-sectional or longitudinal. This choice is influenced by various factors, for instance by research method, number of researchers, scope and purpose of study, subject of investigation etc. This given research belongs to cross-sectional group, due to its time frame and structure. According to Saunders et al. cross-sectional studies may be "seeking to describe the incidence of a phenomenon" and those based on the interviews are usually "conducted over a short time period" (2007, 148).

2.2.1 Grounded theory method

Among other research methods, the grounded theory (GT) can be seen as a relatively new approach. It was developed by two researchers Barney Glaser and Anselm Strauss, who have published their findings in "The discovery of grounded theory" in 1967. The authors simply defined their method as "the discovery of theory from data". However more detailed definition was introduced later by Strauss and Corbin in 1990 which stated that:

> A grounded theory is one that is inductively derived from the study of the phenomenon it represents. That is, it is discovered, developed and provisionally verified through systematic data collection and analysis of data pertaining to that phenomenon. There fore data collection, analysis and theory stand in reciprocal relationship to one another. (Egan 2002, 277)

The grounded theory research process differs from most common methods, by introducing the reverse approach, meaning that the researcher ignores the literature theory (Glaser's approach) or study only some basic aspects of the subject (Strauss and Corbin) and starts with collecting data via interviews and observations. The data then will be selectively coded and should lead to generating the theory.
Even though the primary study on the grounded theory was introduced jointly by Glaser and Strauss, they have come to an argument about the data collection process and the meaning of coding. With the time, three main approaches of the grounded theory have been developed:

1. Glaser's approach,
2. Strauss and Corbin's approach,
3. Constructivist's approach (i.e. Charmaz).

Glaser claims that the data itself must show what the research question is. The researcher should be able to keep his or her own perceptions away from the research project. This important aspect of theoretical sensitivity asks the researcher to remain responsive to all data collected without earlier interaction with the previous theories or hypothesis related to researched problem. Moreover the objective researcher supposed to keep the uncommitted and fairly neutral attitude towards the study (Gorzko 2010). According to Simmons there are five main stages in the research process in the glaserian theory, which is also called the classic grounded theory. The first stage is the preparation, which includes the basic research topic, but no preliminary literature review. The second sage includes the data collection process, most commonly done through interviews. Which is then followed by the data analysis and relating data to the ideas via coding. There are few ways to manage coding of gathered data, for example substantive and open coding which can then create, so called "coding families", when later the theoretical coding conceptualize that they can relate to each other and create hypothesis. The next stage involves creating memos, which is writing the ideas about the coding and finding their relations. As a last stage Glaser sets up need for sorting and theoretical outline. Sorting of memos should outline the theory and relationships between the concepts. All of those processes should lead to refining and drafting the final outcome of the research problem.

In the research conducted by Strauss and Corbin in 1990 it is said that the research question should be formulated before the first interview takes place. Moreover, the researcher should not become too distanced from the research problem. After collecting data from the interviews, each interview should be coded in order to generate strong theoretical concepts out of the gathered data, which will then create the base for the studied problem (Carson et al. 2001). The authors bring up the idea of theoretical sampling, which should elaborate who should be interviewed, what should be observed next and writing down memos about those observations, starting from the first interview and continue after every other. This process ought to crystallize the main hypothesis in the researched area. What is more, the contexts, phenomena, interviewing conditions, strategies of action and interaction should be compared with the purpose of making the theory strong. Conducting the literature review needs to be done after developing the theories, as a confirmation of received results.

Another leading grounded theory approach is related to constructivism, and a main role in developing that concept was taken by the sociologist Kathy Charmaz. This approach prioritizes both, data and analysis, created from shared experiences and relationships with participants and other data sources (Charmaz 2006). According to the author, in this case "the theory depends on the researcher's view" and cannot be separated (Chamraz 2006, 130). During the interaction between the interviewer and the participant they give and take some insights from each other, therefore they both construct the knowledge together. Their communication leads to results which are mutually agreed. It is also said that the researcher should use a journal to write down his or her own ideas and assumptions about the researched area and how they might influence the data analysis.

To conclude, the researcher can find in the literature also other methods of conducting the grounded theory, however it is his or her own decision which would be most useful in the particular study case. Despite the differences, there are some common features for each method (Charmaz 1995 & 2002):

- simultaneous data collection and analysis
- creation of analytic codes and categories developed from collected data

- theoretical sensitivity (avoiding theoretical conceptions)
- inductive construction of abstract categories
- theoretical sampling to refine categories
- writing analytical memos as the stage between coding and writing
- incorporation of categories into a theoretical framework.

The research process, data analysis process and evaluation are discussed later in this chapter.

2.3 The research process model

In the literature discussing usage of the grounded theory the researcher has found several models of the research process. Most of the stages were the same for all of them up to some extent. The researchers using GT method tend to justify their models according to the glaserian or straussian. In order to choose the right model to a given study, it is important to recognize the nature of own research area. The nature of this study is rather exploratory, because it opens the subject for further research and aims to situate Helsinki-Vantaa Airport among aerotropolis. It is a wide topic, therefore some limitations have to be set before collection of data.
The author has decided to follow the straussian GT approach and use the five stages of Eagan's model (2002) in the research. Those stages include: initiation of the research, data selection, initiation of data selection, data analysis, concluding the research; and are presented in the Figure 15. The author has decided to undertake this approach due to several reasons. Firstly, Strauss and Corbin suggest to formulate the research question before the interview sessions take place, this way the researcher has an opportunity to display the study area. Secondly, what the authors also propose is to keep limited distance from the study problem that allows the researcher to get in touch with the topic prior the research. Also the research process model created by Eagan, seems to have a clear and compact structure, which can be helpful for inexperienced researcher. Lastly, the probe issues can be used during the interviews which can guide the research process. Having all these issues evaluated, in researcher's opinion the

study would benefit the most while using this approach. Each stage of the model is described in the following subchapters.

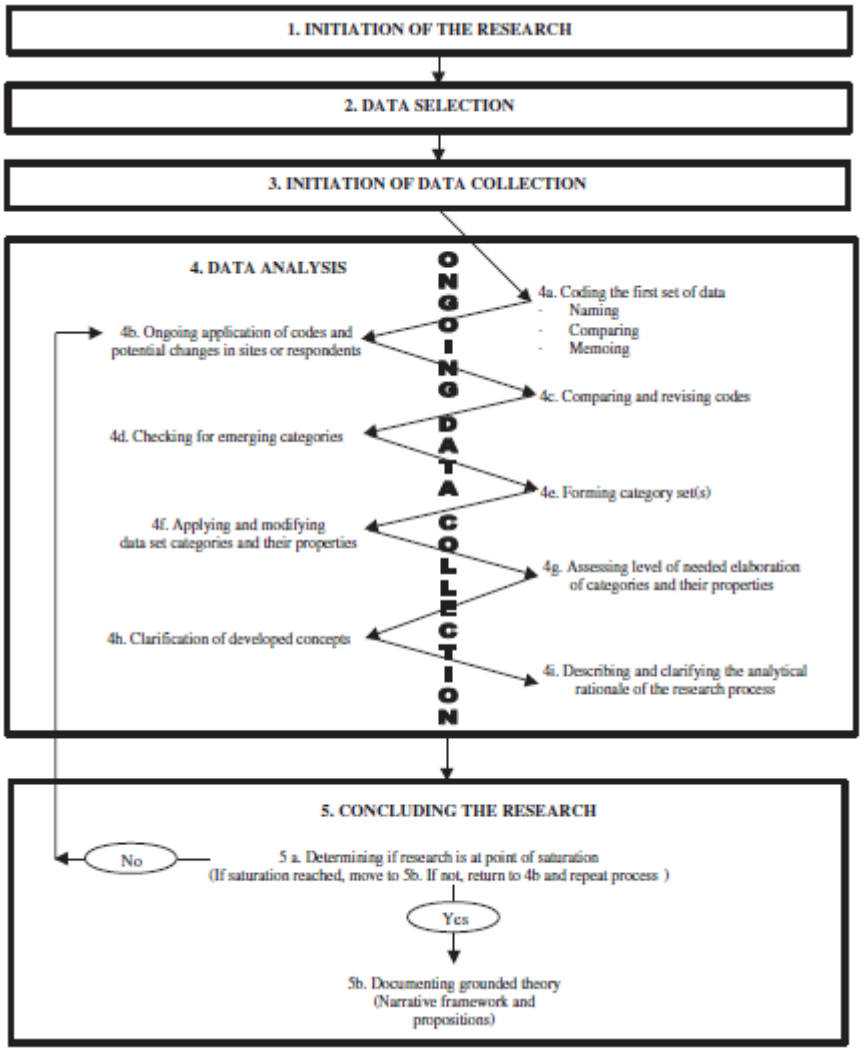

Figure 15. The Process of Grounded Theory-Building Research (Egan 2002)

2.3.1 Initiation of the Research

The first stage of the model involves selection of the researched area. It can be specified for instance as a phenomenon or a place or a context (Eagan 2002). The researcher however needs to avoid assumptions or setting the pre-concepts, because they can direct him or her towards certain perceptions which can affect the data analysis process and later the results. At this point, the literature review should be ignored and left until later stages, thus from the very beginning the researcher sustain "theoretical sensitivity".

Another important aim of that stage is to come up with the research question(s) and elaborate how it should be approached and clearly communicated with the respondents. It should be clarified what kind of data will be examined e.g. personal interviews or focus groups. Moreover, it must be carefully selected who are the potential respondents and justified why they are chosen. In addition, at this point the researcher formulates the intention of the study and the framework. Like in other researches, some variations in the process may show up at any stage, but it should not affect the study in a major way.

2.3.2 Data Selection

According to Eagan the data selection stage "involves the location and identification of potential data sources associated with the research question" (Egan 2002, 282). Since in the previous stage it has been clarified what is the question and who could potentially deliver the data, the first contact needs to be made. In this particular method the data cannot be collected all at once. It must be selected one by one and analyzed by constant comparison. Glaser and Strauss (1967) emphasize the meaning of "theoretical sampling" as a very crucial factor in this type of research. According to the authors "Theoretical sampling is the process of data collection for generating theory whereby the analyst jointly collects codes and analyzes his data and decides what data to collect next and where to find them, in order to develop his theory as it emerges. This process is controlled by the emerging theory" (Glaser & Strauss 1967 in Eagan 2002, 282). This research theory requires from the researcher constant and on-going analysis of the data. It explains the reason why the theory cannot be composed before the actual data collection.

2.3.3 Initiation of data collection

The third stage, initiation and data collection, starts the actual research process. Glaser and Strauss suggest to use the various data sources, however interviews and focus groups are the most commonly used. Thanks to the data collection phase the researcher starts to justify the concepts and links between them. According to Carson, Gilmore, Perry and Gronhaug "a grounded theory researcher will not have an interview

protocol, but may have a short list of probe issues that grows as the number of interviews increases" (2001, 152). However, the researcher has decided to create an interview protocol with the probe issues for the purpose of this study, because this would state a sort of guideline and help to keep the focus on the research questions.
The interviews take place one after another and each of them is concluded by a memo. The interview questions are usually open-ended, where the respondent can elaborate on a given subject and is not directed towards certain answer. The answers thus will be rather subjective, therefore it is up to the researcher to carefully select the respondents. Glaser suggests that in GT "all is data", having on mind observations, behaviors, research scene, documents etc. This way all the sociological and behavioral symptoms can affect the initial research and the theory. As mentioned before, this research will have rather elaborative nature, therefore the focus will be put on gathering the concepts regarding the subject rather than analyzing behaviors and surroundings.

2.3.4 Data analysis

Ongoing data collection process is directly linked with the next phase of research, which is data analysis. It involves constant exchange and comparison between collected information. Egan's model, presented above, shows how the data analysis process could be handled, however the primary model of GT by Glaser and Strauss includes several stages:

1. (open) coding
2. constant comparison
3. memoing
4. theoretical sampling
5. selective coding
6. theoretical coding.

Firstly, when the data from first interview has been collected the researcher starts with open coding. Each of the concept or phenomena gets own code, there are no limitations put on the data, because every idea can be relevant at this stage. It is crucial to find similarities between concepts and those the most dense will then become *core categories* (Jones & Alony 2011). These concepts will be then coded according to their re-

levance to the study. Secondly, the researcher moves towards the constant comparison stage. The chart below, derived from Glaser and Strauss (1967) presents how the data from each interview should be handled. Constant comparison between the themes will help to put the core categories in hierarchical levels. After each interview the researcher will find similarities and differences in each category, which will then develop further categories. "Validity arises through data saturation- when no new concepts emerge" (Jones & Alony 2011, 105). When the researcher comes to a point when there are no new concepts arising during the interviews, he or she can then desist further data collection and start with more advanced analysis.

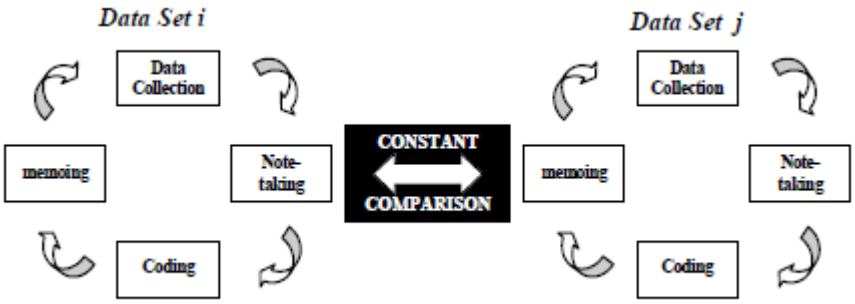

Figure 3. Constant comparison (Glaser & Strauss 1967 in Jones & Alony 2011, 105)

All of the GT specialists mention the importance of writing memos after each interview takes place. The researcher writes down everything in a free style, every thought, observation or reflection, even if that seems to be irrelevant to the study at the given moment. Glaser justifies four main goals for memos: "they should develop ideas and codes, these ideas should develop freely, should be stored centrally, and should be sortable" (Glaser 1978 in Jones & Alony 2011, 106). Eventually memos will help to generate core categories and links between them.

After the data has been coded, compared and put into categories, the next step will be theoretical sampling. The aim of this phase is to select the new participants in the study, who would "provide incidents that add to the understanding of the theories that are evolving in the analysis" (Carson et al., 2001, 155). This new participants should contribute with new data as well as confirming the concepts that are already applied.

Jones and Alony argue that theoretical sampling involves two steps: in the first one "the researcher targets participants who share minimal differences with regard to the subject under examination" and in the second one "an enlargement of the sample commences until differences between participants are maximized" (2011, 106). This process of maximizing the differences assures that theories are fully developed and the data has reached saturation (Glaser 1978 in Jones & Alony 2011). After this stage has been proceeded, the more advanced selective coding takes place, which "is reached when core categories become apparent" (Jones & Alony 2011, 107). This process will allow the researcher to filter the data in order to select the most relevant to the study.

The final stage is called theoretical coding and occurs when the saturation of data has been reached. This simply means that there are no new data coming from the interviews and the core categories are constantly repeated. Moreover, theoretical coding "provides the researcher with analytical criteria for the development of conceptual relationships between categories and their relevance to the literature" (Glaser 1992, 2005; Glaser & Kaplan 1996 in Jones & Alony 2011, 108). That last activity closes the stage of data collection.

2.3.5 Concluding the research

Egan refers that "grounded theory research is concluded when the researcher has observed a point of data saturation and a sufficient theory has emerged from data" (2002, 286). The study needs to be documented and theory has to be supported by relevant literature review. The relationships between the core categories should be defined and discussed. Thus the end report clearly states what the theories reached in the study are.

The report should be concluded with the elaboration on the trustworthiness of gathered data, sources, and the theory itself. Since the purpose of GT research is to generate theory supported by adequate literature review, it should be justified whether theory can be tested. Furthermore, the conclusions concerning research process itself need to be explained. For the closure of the study, the researcher should suggest how the research could be followed up or tested.

2.4 Analysis process

In this chapter, data analysis process will be presented based on the research model discussed in the previous section. The researcher gathered all relevant data concerning GT research and its process. In the very first step, the research area was selected and narrowed down sustaining theoretical sensitivity. Simultaneously the research questions were formulated and probe issues were selected. This stage of the study took place in October and November 2013.

In the next phase, a list of respondent criteria together with names of potential respondents was created in relation to researched area. Even though several GT authors suggested omission of interview protocol in order to avoid presumptions, the researcher has found also another point of view signifying help of such tool. Therefore the decision has been made, that the interview protocol will be used in order to support the researcher. This stage of the process took place in December 2013.

The third stage had started the actual research process. The interview protocol with probe issues was created and tested. Also, first contact with potential respondents via email was made. This took place in January 2014. Later in this stage, first interviews were scheduled with one week time gap, in order to keep the time for first analysis. Since the selected group of respondents were specialists on managerial positions within their organizations, waiting time for scheduled interviews was up to seven weeks. All of the interviews took place within three months' time period, from February to April 2014. During that time, two interviews were conducted face-to-face and two via phone.

Throughout the ongoing data collection process, the analysis were held at the same time according to several stages proposed by Glaser and Strauss. Each concept was coded and positioned according to relevance with researched phenomena. According to many qualitative researchers "the initial step in qualitative analysis is reading the interview transcripts, observational notes, or documents that are to be analyzed" (Dey 1993, Smith 1979, Tesch 1990 in Maxwell 1996). Out of memos written after each interview, the researcher had selected and constantly compared all received data. At this stage also, first contact with theoretical sampling was made. The relevant literature re-

view was selected in order to support the findings. This process should take place until the data saturation is reached and no new data was received during the interviews. In this study, the research process was closed after four interviews, due to clear structure of generated core categories and due to limited time for reporting the research. The researcher had noticed data saturation and had decided to report findings based on received outcomes. The closure of the research process took place in the end of April 2014.

2.5 Evaluation

While evaluating the usage of GT, there are several aspects to be considered (Strauss & Corbin 1998 in Egan 2002, 288):

1. judgments about the validity, reliability, and credibility of the data
2. judgments about the theory itself
3. decisions regarding the adequacy of the research process through which the theory is being generated, elaborated, or tested
4. conclusions about the empirical grounding of the research.

In GT research once the theoretical saturation is reached, the literature review takes place in order to confirm the findings and generate the theory. This way the internal validity is reached, that is, "the extent to which the findings can be attributed to the interventions rather than any flaws in one's research design" (Saunders et al. 2007, 137). While the external validity, "the extent to which the research results from a particular study are generalisable to all relevant contexts" (Saunders et al, 2007, 598), is reached by the theory itself that should narrow down the area to which research's findings can be applied (Daengbuppha et al. 2006). According to researcher's judgment this study meets the requirements of validity. Questionable may be the fact of rather small amount of respondents. As Eisenhardt stated "with fewer than four cases, it is often difficult to generate theory with much complexity, and its empirical grounding is likely to be unconvincing" (1989 in Carson et al. 2001, 545). The researcher in this case study had noticed data saturation with four interviews and had decided to close the research.

The theory which was generated out of analyses has rather exploratory nature and opened the discussion for further research. The phenomena of airport city and aerotropolis had been discovered and discussed in this study, however its reliability has not been tested. The results of this research could serve as starting point for yet another research concerning Helsinki Airport and its urban development.

2.6 Data collection and instruments

2.6.1 Interview

The interview as a tool in research projects may be carried out in various ways, from highly structured and formal questions, to unstructured and informal conversations. The interview is also distinguished in various typologies, when it comes to structure and formality, it can be categorized as: structured, semi-structured, and unstructured or in-depth interviews (Saunders et al. 2007).

Structured interviews are usually the questionnaires which use same set of standardized questions with each respondent, in the same order, exactly as it is written and with the same tone of voice (Arthur & Nazroo 2003). This way all the issues are covered the same way with each interviewee, what should collect the quantifiable data, what suggest that this type of interviews are commonly used in qualitative research and when large samples of surveys are required (Saunders et al 2007).

Semi-structured interviews are more flexible in terms of structure and allow the researcher to make the changes and adjustments in data collection process. The interviewer has a list of questions and general topics or probe issues that should be covered, but they can vary in relation to respondents (Saunders et al. 2007). The question tend to be asked in similar order and form, however it is also possible to bring new topics to the conversation if the new issue has been discovered. This type of data collection is usually used in qualitative research.

Unstructured interviews are referred also as in-depth interviews due to their informal nature. In this type of interview there is no structured list of questions, but rather a

topic that should be explored. Moreover, "the interviewee is given the opportunity to talk freely about events, behavior and beliefs in relation to the topic area, so that this type of interaction is sometimes called non-directive" (Saunders et al 2007, 312). The goal here may be getting deeper understanding of someone's experience.

When taking under consideration the nature of relation between the interviewer and the respondent, the interviews may be one-to-one, so the interaction researcher-one participant. In this case interviews are most likely held face-to-face or in various cases can be also through telephone or via the Internet (electronic interview). On the other hand, the interviews may be also undertaken in relation one-to-many, this include group interviews and focus groups, which can be also lead face-to-face or electronically. The decision about the type of interview and the nature is made by the researcher, after the analysis which type of the interview most properly anticipate with the study.

For the purpose of this research, semi-structured interviews were used due to the nature of grounded theory in qualitative research. The nature of the interviews was one-to-one and conducted both face-to-face and via the phone. This way, the researcher had the opportunity to adjust the questions and probe issues during the data collection process. When the new topic occurred, which could be relevant to the theory building, it was also undertaken in later interviews.

2.6.2 Selection and number of respondents

When it comes to interviewee selection, there are three types of sampling in qualitative research: convenience sampling, purposive sampling, and quota sampling. Convenience sampling is "a way of sample that is convenient, available at the time and place of your choice" (Brotherton 2008, pp.171-172). It may relate to people that researcher know personally or a way of approaching respondents in a place under investigation. Purposive sampling, on the other hand relates to selection of respondents on the basis of some common characteristics. For instance, some people may possess relevant information based on their current work position or employment place. It may also refer to particular place or event due to applicable characteristics (Brotherton 2008). Lastly, in quota sampling "proportionate quotas for subjects to be included in the sample are

devised so that the proportions are the same in the sample as they are in the population" (Brotherton 2008, 173). The selection of samples is not done randomly, but usually based on statistics or demographics.

In this research the purposive sampling was used, because it is recommended for the GT case studies. This method allows the researcher, based on his/hers judgment "to select cases that will best enable to answer the research question(s) and meet the objectives" (Saunders et al 2007, 230). The purposive sampling has also different strategies, to the most common ones belong: extreme case (or deviant sampling), heterogeneous (or maximum variation), homogeneous, critical case, and typical case. The summary of each strategy is presented in a table below:

Strategy	**Main characteristics**
Extreme case (deviant sampling)	Focuses on unusual or special cases; enables to answer research question(s) most effectively; findings may be useful to understand more typical cases
Heterogeneous (maximum variation)	Collects data to describe and explain the key themes which can be observed; may contain cases that are totally different; enables the uniqueness of the document
Homogeneous	Focuses on one particular subgroup; sample members are similar; in-depth study of chosen group
Critical case	Selects critical cases, which are currently important or can make a point dramatically
Typical case	Provides an illustrative profile using a representative case; makes the study simple for the readers and those unfamiliar with studied matter

Figure 4. Purposive sampling strategies (Saunders et al 2007, 232)

In this study, the heterogeneous purposing sampling was used, this way the maximum variation of data was assured. The strength of this strategy is that even small samples may contain completely different cases or opinions, which maximize the findings and bring a dose of uniqueness to the research. It is however suggested to create sample

selection criteria prior the actual sample selection (Patton 2002 in Saunders et al. 2007, 232).

Here, the interviews were conducted with specialists directly connected with airport's operations, including such organizations as: Finavia, Aviapolis, and the Directory of the business development of Vantaa city. Finavia is the managing body of Helsinki-Vantaa Airport, their customers are both the companies within air travel operations as well as the flying passengers. Aviapolis is the expanding business district surrounding the airport on the area of 42 square kilometers, under a directory of Vantaa city.

The personas were selected on the basis of their current work position, career background, relation to Helsinki-Vantaa International Airport, their professional connections, and the decisive power they possess in terms of changes at the Airport together with its urban area.

When it comes to the number of interviews "the literature recommending the use of case studies rarely specifies how many cases should be developed. This decision is left to the researcher…" (Romano 1989, 36 in Perry 2010, 793). In the literature discussing the case study research there are few terms used as a culmination point for data collection: "data saturation" (Jones & Alony 2011, 105), "theoretical saturation" (Eisenhardt 1989 in Perry 2010, 793), "the point of redundancy" (Lincoln and Guba 1985, 204 in Perry 2010, 793). This way the data collection process will stop while there are no new insights coming from the interviews. Perry has proven that researchers have different views when it comes to specific number of respondents:

> "Some advocate a minimum of two, but the usual view is that "in practice four to six groups probably form a reasonable minimum for a serious project" (Hedges 1985, pp 76-7). For the maximum, Hedges (1985) sets up upper limit of 12 because of high costs involved in qualitative interviews and the quantity of qualitative data which can be effectively assimilated. (…) In brief, the widest accepted range seems to fall between two to four as the minimum and ten, 12 or 15 as the maximum."
> (Perry 2010, pp. 793-794)

For the purpose of this research four interviews were conducted in the period of time between February and April 2014. Two of the interviews were held face-to-face and other two via the phone conversation. The interviews were recorded and followed the interview protocol, which is discussed in the following part.

Before the interviews took place and before the respondents were contacted, the interview protocol was created in January 2014. The interview protocol was based on the researcher's prior knowledge of studied phenomena. It included short description of the study's background, information about the researcher, implications and participant's rights, opening questions, probe issues, use of data and researcher's contact information. The protocol was based on the suggestions described by Saunders, Lewis, Thornhill (2007) and is attached to this report in Attachment 1.

The final version of the interview protocol was created after corrections and adjustments were made based on two trial interviews. One trial interview was conducted with researcher's colleague who used to work at the check-in desk at Helsinki airport for 5 years. The other trial interview took place during the researcher's flight on the route Helsinki-Amsterdam with KLM Royal Dutch Airlines in December 2013 and the respondent was one of the flight attendants. These people were selected on the base of their professional knowledge and interaction with Helsinki Airport. The trial interviews tested structure of the interview protocol, respondent's understanding of questions and relativity to the studied phenomena. Because of this process some of the questions were removed or corrected, which lead to the final protocol's version created as mentioned above.

The summary of data collection timeline has been presented in the table below:

Period of time	**Process**
December 2013	first version of interview protocol was created
December 2013	two trial interviews were conducted
January 2014	final version of interview protocol was

	created
January 2014	potential respondents were contacted via email
February-April 2014	interviews with specialists were conducted

Figure 5. Data collection timeline (Developed by the author)

3 Data analysis and results

3.1 Findings of Helsinki Airport

3.1.1 Accessibility in the catchment area

All of the respondents agreed that catchment area of Helsinki Airport is very extensive and that closest neighboring airports do not play a significant role as competitors. According to respondent 2 (R2) people who are arriving to the airport can be roughly divided into four groups: 30% coming by private car, 30% coming by taxi, 30% coming by bus, and 10% state the transfer passengers. Furthermore, respondents 3 and 4 (R3, R4) had stated that the railway connection, which will be open in mid-2015 will slightly change the allocation of arriving passengers, but the main advantage will be the fact that the Airport will be reachable faster and with environmentally friendly substitute of cars and taxis. Respondent 1 (R1) stated that "accessibility is probably one of the key words that would somehow concentrate all the aims, all the means, all the investments which are currently being in progress around the airport in these coming years". He continued in this subject that current constructions on ring road three, together with new railway stations and bridges that connect the main roads with the Airport will improve the connectivity and economic performance of entire region. According to R3 the main investments towards better accessibility will be finalized in 2016, but further development of airport's neighboring area will take still many years. R4 had pointed out that parts of Estonia and Russia lie within the ratio of catchment area, so the cooperation with these countries, and with Tallinn and Saint Petersburg in particular, will be constantly developing.

3.1.2 Airport as a business hub

When asked about the businesses surrounding the Airport, all of the respondents stated that it is rather predictable and typical for any airport. Thus airport is surrounded by logistic companies, hotels, business centers and office buildings, convention center, shopping mall, car parks, and variety of small businesses. R1 referred to Aviapolis, the Airport's business district, as "the most vital part of Vantaa city and the fastest growing business district in the whole country". All respondents agreed that

Aviapolis region works like a pump for Finnish economy. It was also mentioned that IATA had estimated that 3,2 per cent of Finnish GDP comes from Airport's urban area, which is equivalent to Nokia during its years of top performance. The Airport itself is a huge employer for currently 20,000 people, its direct neighboring area is a place for another 20,000 people and this circle has a tendency to grow. The potential of Aviapolis was suggested by all the respondents, while R4 noticed that it has a potential to become a separate sub-region of the capital area yet closely linked to the capital. R1 had compared the growth of Helsinki Airport with its urban area to Schiphol model in terms of its economic development. Furthermore, it had been suggested by three respondents that in the near future the actual center of Vantaa city will be located at the Airport, while administrative body will most likely stay in Tikkurila district.

Two respondents had mention the importance of "2020 development programme" in terms of Airport's growth and performance improvement. The demand for airport operations is constantly growing, this is why operational capacity must be expanded, and thus the Airport is getting ready to receive 20 million passengers in early 2020s. R2 had put a special impact on improvement of passenger experience and smooth flow of operations for outgoing and incoming passengers. To make it happen, first operations of the development programme are already in preparation. There will be 7 new security lines in the place of old congress center, more floor space will be created in Terminal 2 by relocating some of the booths (e.g. the currency exchange booth) to make check-in area more spatial. Some major changes will also occur on the air side, i.e. after the security check, including new duty free operator and plenty of new shops. The changes are expected to progress as the programme continues, and in longer term the Airport will probably become a great agglomeration.

3.1.3 Noise and emission issues

All respondents mentioned the importance noise and emissions control as one of the key points in terms of current operations and future development. R4 said that "near the airport you never find a silent place, but it is important to make it as convenient as possible for people to live nearby". This is the reason why the Airport is taking all the actions to continuously decrease its impact on the environment. It was mentioned by

two respondents that new method of continued decent landing will have positive effects in terms of noise control as well as reduced CO2 emissions. Airport's operator Finavia put a significant attention on recycling, therefore the waste produced by airport is segregated and utilized in appropriate environmentally friendly way by specialized companies. Furthermore, R4 mentioned a major problem of winter maintenance at Scandinavian airports, which involve actions of de-icing and anti-icing of aircrafts, runways and aprons. The chemicals which are used for snow and ice removal at Helsinki Airport are not qualified as harmful and their impact on environment is constantly monitored and reported. The Airport has mastered in snow-how operations, last time it was closed due to weather conditions in 2003 and it lasted for half an hour, this proves high reliability of performance. Finavia's biggest environmental goal at the moment is to prevent aircraft noise despite constantly growing number of inhabitants in its urban area, which is now controlled by usage of runways and flight route planning, especially during nights. Moreover, Airport's operator wants to be transparent for society, therefore all the actions are reported and available to everyone.

3.1.4 Sustainable growth

It was mentioned by respondents that airport itself will grow in the near future, so also will Aviapolis and the residential area within the district. R1 mentioned that there are plans for Aerola, sub-district of Aviapolis, to build houses for 6,000 new inhabitants. He continued that the goal is not to build a "silent city" which operates on working days from 8.00 to 16.00, but to have fully functioning urban area with schools, shops, medical care, and daily need services, with the aim of encouraging people to move there. While R2 claimed that there is plenty of space to grow more. There is a space for satellite terminal, and even for one more further between the runways. By following the 2020 development programme, there are plans for new building including one centralized security control, one centralized check-in counter and also centralized baggage claim. R1 noticed that city plans for next 20-30 years has not been up to date with the speed of progress in the urban expansion. This had resulted with temporary prohibition of new investments within Aviapolis area, until the new plans for the region are prepared and approved. On the other hand, R3 put attention on balance between con-

stant growth of the airport and conditions of living in the area. A high quality level should be maintained in the region, which equals to sustainable growth at all levels.

3.2 Constructed theory

The main objective of grounded theory research is to "systematically develop a theory from the collected data" (Charmaz & Bryant 2007 in Silverman 2011, p 291). The researcher's aim in the interpretative research is to understand studied phenomena in contrary to positivist researchers who treat theories as variables and verify them through testing of hypothesis. For Strauss and Corbin "theory means a set of well-developed concepts related through statements of relationship, which together constitute an integrated framework that can be used to explain or predict phenomena" (Strauss & Corbin 1998 in Charmaz 2006, p 127). The researcher's goal of this study was to understand the concepts of airport city and aerotropolis, and formulate a theory based on the researched questions, which were as follows:

1. Is Helsinki-Vantaa International Airport a functioning airport city and/or aerotropolis?
2. Which features are characteristic for the aerotropolis?
3. What are the predictions for the future in terms of urban expansion for the Airport?

Based on the analysis of collected data and analysis of theoretical framework, the researcher constructed the following theory:

> "Helsinki Airport can be called a fully functioning airport city and is also on a good way to become well developed aerotropolis in a near future."

Helsinki Airport is the employer for nearly 20,000 people, the services which are located at the airport and its direct neighborhood include: shops, restaurants, hotels, business facilities, medical care center, residential area, etc. All of those features are typical for any urban agglomeration. According to R1 the Airport is on the prominent move to become sort of metropolitan sub-region city. In order to achieve that, there are still many things to be done. People need to be encouraged to move into Aviapolis area and this will not happen rapidly, it is rather a long term process. There are still

needs of services and facilities which would make Aviapolis an attractive place to live. The city planners have in perspective the idea of aerotropolis. As a confirmation of that can be rail line currently being under construction. Some of the stations of the new connection rail line between Helsinki city and the Airport are located in places where nothing is build there yet. This creates an opportunity for Airport's urban area to develop faster. The city planners want to reach certain level of quality, since Aviapolis is a very first touch of Finland for many international travelers it should become a representative place of Finnish economy, culture, and design. About 90% passengers arriving to Helsinki Airport pass on their way through Aviapolis, this is also a reason to make this region attractively looking. Airport's urban area is the fastest growing region in the whole country, therefore in the future it is expected to be the engine for national economy. In world rankings from 2013 Finland was chosen as (Team Finland 2013):

- the fifth country in the world as a place for dynamic business by Grant Thornton Global Dynamism Index
- among ten most prosperous countries in the world by the Legatum Institute Prosperity Index 2013
- the third in World Economic Forum's 2012 Global Competitiveness Report
- the sixth in innovativeness by Global Innovation Index 2012
- the first in the World Economic Forum's Networked Readiness Index 2013
- the second in gender equality in the World Economic Forum's annual Global Gender Gap report
- the sixth best in the world for higher education and number of researchers.

Accordingly, Helsinki in 2013 was voted as:

- one of top cities for start-up business by Wired Magazine
- Helsinki's public transport voted as the best in Europe for the fourth time based on the residents' satisfaction
- the eighth best city to live in by the Economist Intelligence Unit's annual study.

All of these rankings stay on behalf of Finland as one of the most attractive place to set up a business and to live. This is also a reason why future of Helsinki Airport is extremely important for entire country. With a fully developed aerotropolis Finland will strengthen its position in the global market.

4 Theoretical framework

4.1 Deregulation and liberalization of the airline industry

Before global network between big and developing cities has started, and before airports became economic, business and cultural centers, some major changes in the airline business had occurred (Ashford et al. 2011). Two major alternations in the international aviation law have triggered the expansion of airport business, the first one was airline deregulation act from 1978 and the second one was the liberalisation of the market by EU in mid-nineties. The evaluation of results of those two political decisions give an understanding why the airports started to expand and compete.

To summarise the background of the Airline Deregulation Act in USA, it is important to mention how the aviation market looked like before the change. Domestic commercial airline industry was regulated by Civil Aeronautics Board (CAB), what is more, they governed which airlines could serve which routes, and determined which airline could enter the market or merge with other company. They also set the fares for connecting routes, which tended to subsidize low-cost fares on short flights by imposing above-cost fares on longer flights. Believing that this actions result in inefficient growth within the industry, USA Congress decided to make changes in existing law. The Deregulation Act had a number of effects, but the most significant was a major drop on air ticket fares, which effected in rising competition and expansion of the aviation business as a whole. The demand on airport operations had raised as well as the number of airlines, which gave higher number of flying passengers, therefore airports had to expand with their operation capacity and services (Civil Aviation Authority 1993). Creation of the "hub and spoke" system has started a great expansion of hub airports, which many of them are nowadays the aerotropolis.

Another important step towards open competition was taken by the European Commission. Before mid-nineties in the countries within EU most of the services, including transportation, were provided by national organizations with exclusive rights. By opening up these markets, which is now known as the liberalisation, customers were able to choose from wider range of service providers. This regulation touched directly airlines,

therefore affected indirectly also the airport operations. According to EU Directive (96/67) "the market of ground-handling services at EU airports was progressively opened to greater competition, in the expectation that this would lead to reduced operating costs and for airlines and improved quality of handling services" (ICAO 2003). This has resulted directly in number of airport operations. According to Civil Aviation Authority the number of flights between 1992 and 1994 to/from hub airports rose by six percent, while those to non-hub airports declined by nineteen percent (Civil Aviation Authority 1995), which has started the expansion of European aerotropolis.

Yet another important aspect, which had impact on city growth was globalization. One from many of its direct consequences was creation of global cities. A global city is "a city deemed to be an important node in the global economic system" (Ashford et al. 2011, 660). Over the years there have been many studies on this subject conducted by various research centers, which aim to define and characterise this concept. One of the main research projects was conducted by the Globalization and world Cities Study Group and Network (GaWC). They continue their research and frequently update the world map of global cities. Moreover, they have created a classification according to which cities can be defined on the global economic scene. According to latest ranking from 2012 Finnish biggest city- Helsinki, does not belong to primary list of alpha global cities, but is listed as a beta city. Meaning that, Helsinki belongs to "important world cities that are in linking their region or state into the world economy" (GaWC 2012). Because of globalization, the list of global cities tends to expand and fast developing cities are up-grading with every ranking that also includes Helsinki.

To summarise, "with onset of deregulation, liberalization, and globalization, many airports outgrew their role as just transportation centers and became major urban intermodal nodes" (Ashford et al. 2011, 659). This also caused that such terms as "airport city" and "aerotropolis" started to function as new concepts in airport development strategies. The use of land around the airport became as important for city planners as the structure of the airport itself.

4.2 Airport city concept

Some of the global cities cooperate with their airports so closely, that they become "airport-centric" (Kasarda 2008c, 4), which has a direct impact on creation of airport city. The airport city model represents the fact that airports have the potential to generate revenues not only from the aeronautical services and venues, but they state also as unlimited source of non-aeronautical profits. Since airports are usually surrounded by thousands of hectares of unused land due to environmental issues, "it has been recognized that airports are sitting on a potential goldmine of real estate opportunities" (Global Airport Cities, 2014). The airport-centric development has come to a point where the airport together with its surrounding zones "have morphed into major business, shopping, working, trading and entertainment destinations" (Ashford et al. 2011, 663). That transformation Kasarda has named as the "Airport City's Triple Bottom Line" (Good 2007, 9):

1. airports receive more of their revenue from non-aeronautical sources
2. commercial development makes airports a place of business, employment and entertainment
3. airport surrounding develops "brand image" attracting various businesses and investors.

The first airports which have pioneered that concept were influenced by the work of American visionary and researcher McKinley Conway. According to his idea, the airport should be the place where "aviation-linked commercial development would evolve, grow, and prosper around airports in synergy through incorporating business, residential, industrial parks, logistical facilities, and cargo distribution centers all integrated into the conventional airport" Ashford et al. 2011, 663). Another important person who advocated that concept and later developed the term aerotropolis is John Kasarda. So far, there has been insignificant number of researchers working on the model of airport city, therefore the number of sources may feel vague.

Chris LeTourneur, founder of the Airport Cities World Conferences and Exhibitions, has established four drivers that airport cities respond to (LeTourneur 2001 in Kasarda 2008, 5-6):

1. Airports need to create new non-aeronautical revenue sources, both to compete and to better serve their traditional aviation functions.
2. The commercial sector's pursuit of affordable, accessible land.
3. Increased gateway passengers and cargo traffic generated by airports.
4. Airports serving as a catalyst and magnet for land side business development.

Many of the world's greatest cities have understood the significant importance of the airports and have started to put more affort into development of airports' urban area, having on mind that this would affect the economy of the city as a whole and even the economy of a country.

4.3 Aerotropolis concept

Over the time the airport cities started to grow outside the direct airport surrounding, building up new city districts and finally have created a new urban form, which was first called by Dr Kasarda- the aerotropolis. The name has its origin in metropolis, created by the city core and linked suburbs. While the aerotropolis consists of "an airport city core and extensive outlying areas of aviation related businesses and their associated residential developments" (Kasarda 2008c, 13). Ashford adds to this definition that

"arterial spines and clusters of aviation-linked businesses are now radiating outward up to 20 km or more deep into the metropolitan area along and near airport access corridors forming the greater airport region, or aerotropolis" (Ashford et al. 2011, 664). The aerotropolis model is a respond to new economy's demands for connectivity, speed and agility (Kasarda 2008c). Some of the aerotropolis have evolved over the time from regular airports and airport cities, while nowadays many of them are aerotropolis-by-design, for instance New Songdo City build entirely from scratch. Thus, airport transformation is an on-going process of constant change and improvement. All the new technologies and solutions have a direct effect on airport operations and design. According to Kasarda's latest report from 2013 there are 25 operational aerotropolis, 20 operational airport cities, 26 developing aerotropolis, and 13 developing airport cities worldwide.

When an airport is at the same time a city, it has to possess certain features in order to serve travelers as well as residents. Kasarda (2008c) has listed most common features for airport city:

- duty free shops
- restaurants and specialty retail
- cultural and entertainment attractions
- hotels and accommodation
- banks and currency exchanges
- business office complexes
- convention and exhibition centers
- leisure, recreation and fitness
- logistics and distribution
- perishable and cold storage
- catering and other food services
- Free Trade Zones and Custom Free Zones
- golf courses
- factory outlet stores
- personal and family services such as health and child day care.

This list proves that not every airport can serve as airport city. Those features state only the basic components, but when taking a closer look at any of the fully operating aerotropolis, it comes clear that the list of components is much longer. Figure 6 presents a map of aerotropolis schematic, which illustrates the allocation its features.

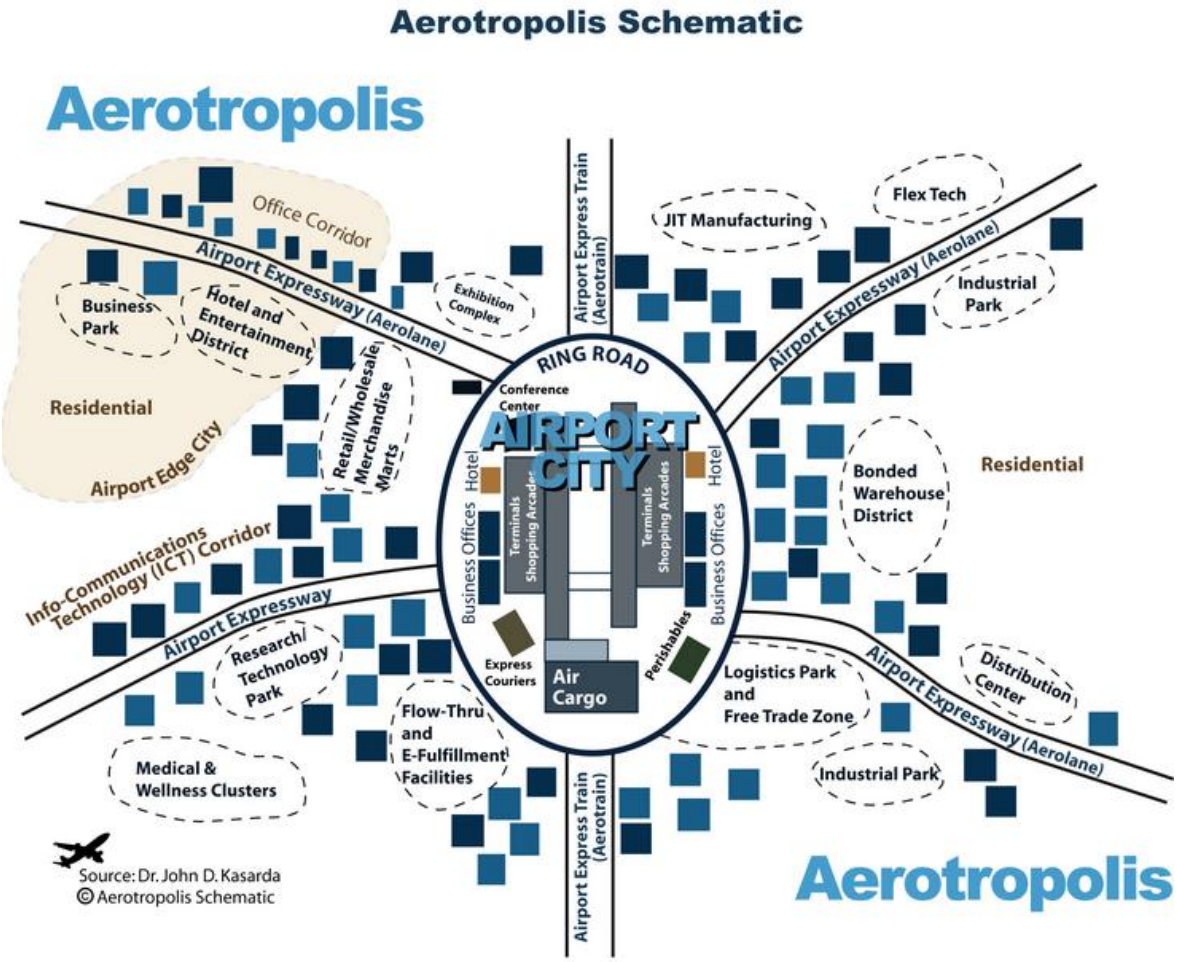

Figure 6. Aerotropolis Schematic (Aerotropolis 2011)

This map shows that airport lies a very heart of the whole complex. In airport's direct neighborhood are located business offices, hotels, conference centers, express couriers, and air cargo together with perishables. The airport city components are surrounded by ring road- a high-way that connects all of the outer express roads, here also called aerolanes. Apart from express roads, the airport city can be also reached by express train line- aerotrain. On the outer boarder of airport city the rest of aerotropolis components are located, including: technology and communications district, retail/wholesale, warehouses, manufacturing, industrial parks, logistics, Free Trade Zone, research facilities, business parks, business offices, residential area, hotel and entertainment facilities, medical and wellness clusters. In principle, all of those elements exist in synergy following the sustainable growth path. What is more, Kasarda states that airports create "value added real estate and services outside the fence (airport city) that funnel additional passengers and cargo back into the airport" (Good 2007, 6). It creates a winning

situation for both, the airport city and the aerotropolis area, because airport city's services attract customers and investors, who then settle their businesses within the aerotropolis boarder. This kind of synergy and cooperation Kasarda explained on the model of Amsterdam Schiphol aerotropolis, which is shown in the figure 7.

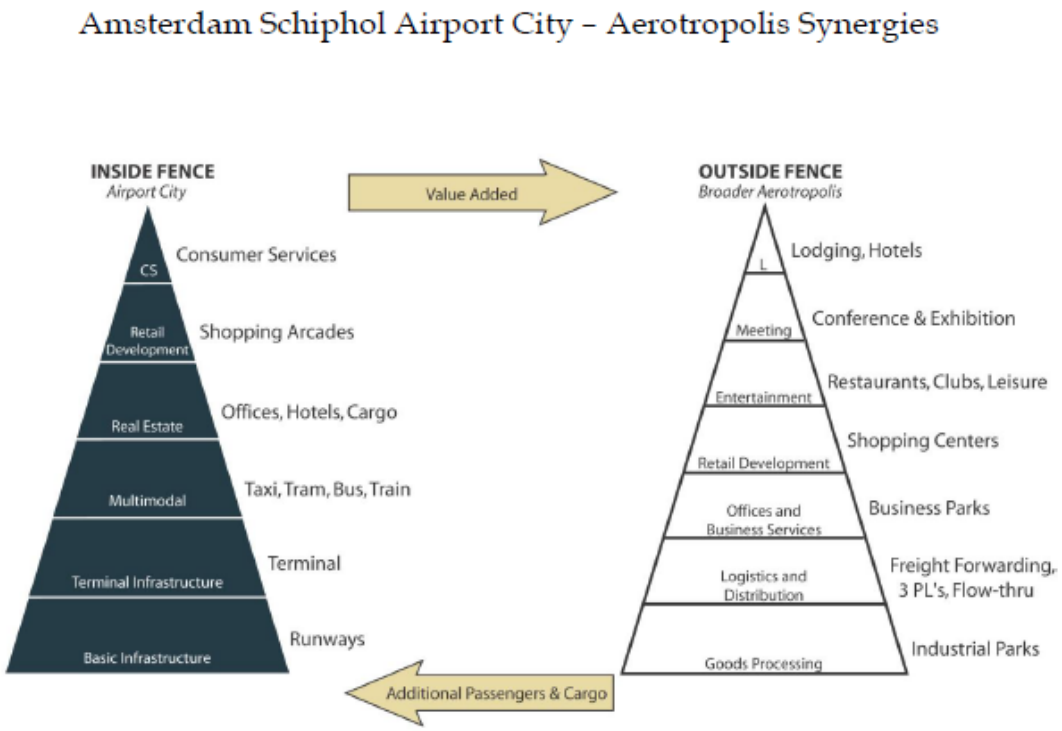

Figure 7. Airport City - Aerotropolis synergies (Good 2007, 6)

The airports which have successfully implemented that model and which can be called as the examples of world's triumphant aerotropolis are (Kasarda 2008c):

- Incheon International Airport, Seoul
- Hong Kong International Airport, Chek Lap Kok
- Kuala Lumpur International Airport, Malaysia
- Dallas-Fort Worth International Airport, USA
- Dubai World Central (under construction)
- Schiphol Airport, Amsterdam.

According to researchers Andersson and Kuhlmann (2008), who conducted a research on the aerotropolis phenomena, airports should offer a sustainable competitive advantage to its customers which may cover many aspects that includes:

1. Exceptional customer experience
2. Connectivity
3. Robust safety and security
4. Operational efficiency
5. Integrated business process
6. Attract and retain qualified professionals.

The customer experience involves not only the travelers, but also visitors and airport's clients, therefore it should be insured that the quality is perceived at any level of service. The connectivity for passengers, baggage and fright within airport city area needs to be fast and smooth with the assurance of perfect safety and security. Areotropolis has to be also efficient with its operations including the management, employment, operational and technological systems being in use. And that is followed by integrated operations of all the stakeholders and the flow of information between the parties. Finally, aerotropolis should be an attractive place to work and live for professionals who affect then continues development and improvement of the area. In addition to that, Kasarda argues that extensively working aerotropolis can be reached by putting together airport planning, urban planning and business site planning:

> An improved physical and social environment must be created that facilities traffic flows in and out of the airport aligns businesses in proximity to the airport in relation to their frequency of use of the airport, promotes fast airport access to both the down town and airport-dependent enterprises located throughout the region; locates com mercial and residential developments sensitive to noise and aircraft emissions outside high intensity flight contours, and creates mixed-use residential clusters where airport and airport-area employees can communicate easily to work while residing in human-scale communities supported by adequate retail, service, and community facilities. (Kasarda 2008c, 33)

4.4 Profile of Helsinki-Vantaa International Airport

4.4.1 General information

Since its opening in 1952, Helsinki-Vantaa International Airport has gone through many transformations in its operational functions. It was built for the need of the Olympic Games and since then its importance in the national and international arena has noted significant growth (Airports Guides 2014). At the present the Airport serves

nearly 15 million passengers annually, connects with 120 direct destinations, provide 470 daily operations and is the employer for about 20,000 people (Finavia 2014b). With its three runways and a new terminal, the Airport has built its strong position in European market. To its biggest competitive advantages belong shortest way to connect Europe with Asia, and smooth travelling concept. Helsinki's geographical location stands in benefit to serve direct operations with Asia. Since there is no night curfew at Helsinki Airport, meaning no restrictions towards night operations (that exclude noisy aircrafts which exceed the regulations), the Airport offers 24 hours return flights to Asia. At the moment there are 13 direct Asian destinations and 80 departures per week from Helsinki Airport, which makes it eighth most important Europe-Asia airport, as shown in the figure 8 (ACI 2013a).

Figure 8. Leading European Airports for Asia flights (ACI 2013a)

Furthermore, the concept of smooth travelling involves several issues which are connected with the design of terminals as well as its services for airlines and travelers. As presented in the figure 9 all of the terminals are located under the same roof which means no terminal transfers for the passengers. This design guarantees short walking distances between the gates and a minimum connecting time (MCT) of 35 minutes (Finnair 2014). Smooth travelling concept is also achieved by Airport CDM- Collaborative Decision Making between airport operator-Finavia, airlines, ground handling

companies, air traffic control, and European Air Traffic flow Management in order to improve the efficiency of operations and information exchange.

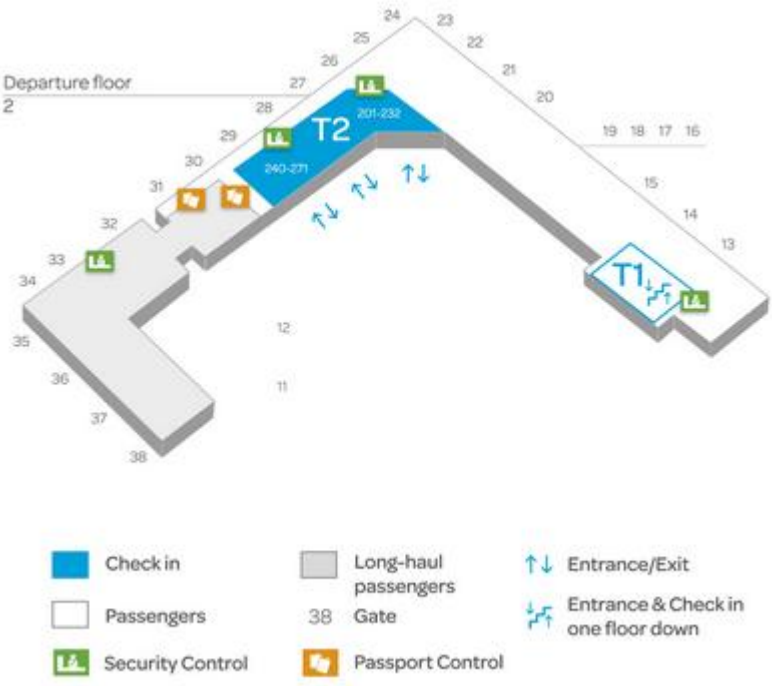

Figure 9. Helsinki Airport's terminal layout, departure floor (Finavia 2014c)

The Airport puts a special effort to increase customer experience and satisfaction rate. This is why there are info signs around the terminals available in Russian, Chinese, Korean and Japanese. To innovative and convenient solutions belong also free Wi-Fi, Automated Boarder Control systems and check-in kiosks in the terminals and in the nearby hotels, for instance in Hilton Helsinki-Vantaa Airport Hotel. Terminal is also the place where Finnish art and design meet to promote its uniqueness outside the boarder.

For airline customers Helsinki Airport is especially known for its excellence in snow and ice management. It takes only 11 minutes to clear one runway from snow and ice, while the other two may be in use at the same time for landing and take-off. The last time the Airport was closed due to weather conditions in 2003 and it lasted for half an hour, this proves high operational management and reliability (Finavia 2014c). Thanks to its 24 hours operations and world class baggage handling system, the Airport has gained trust of many worldwide airlines.

4.4.2 Accessibility in the catchment area

Helsinki-Vantaa International Airport is Finland's biggest hub and it serves as a gateway for 24 other major Finnish airports. The range of its catchment area is quite wide due to the geographical location as well as the amount of inhabitants. Since the majority of Finnish population live in the southern regions of the country, Helsinki Airport serves up to 3,5 million people within its catchment area (Airline Network News and Analyses 2014). There are only two other neighboring airports which can compete in the overlapping areas and those are airports in Turku (170km away) and in Tampere (180km away). Another significant meaning has a fact that Helsinki has a direct access to the Baltic Sea via number of passenger and cargo harbors, and through that attracts passengers from Estonia and also from St. Petersburg, Russia. The map below presents the whole range of the Helsinki Airport catchment area.

Figure 10. Helsinki-Vantaa Airport catchment area (Airline Network News and Analysis 2014)

When taking under consideration the metropolitan area, the Airport is located about 20km away from Helsinki city center, 6km away from the center of Vantaa city, and 26km away from Tapiola- the business district of Espoo city. The airport is well served by public transportation, where buses take off frequently to various destinations within the metropolitan area. It is also one of the main stops for the long distance busses travelling around the country. The private shuttle busses take the passengers to the hotels located around the airport as well as to the long-term car parks. Another convenient and popular way to get to the airport are taxi services available 24/7. For cargo transport it is important that the terminal can be accessed directly via highway 45 and ring road III connecting all of the major roads surrounding the capital. In the near future it will be possible to access the airport even faster thanks to the Ring Rail Line which is expected to be finalized and open in mid-2015. Because of that massive investment the Airport's urban area constantly gain even more customers and investors, developing a brand new district called Aviapolis. The map below shows the rail connections after the project will be completed. It will serve the entire region and improve the quality of transportation for travelers and employees of Aviapolis.

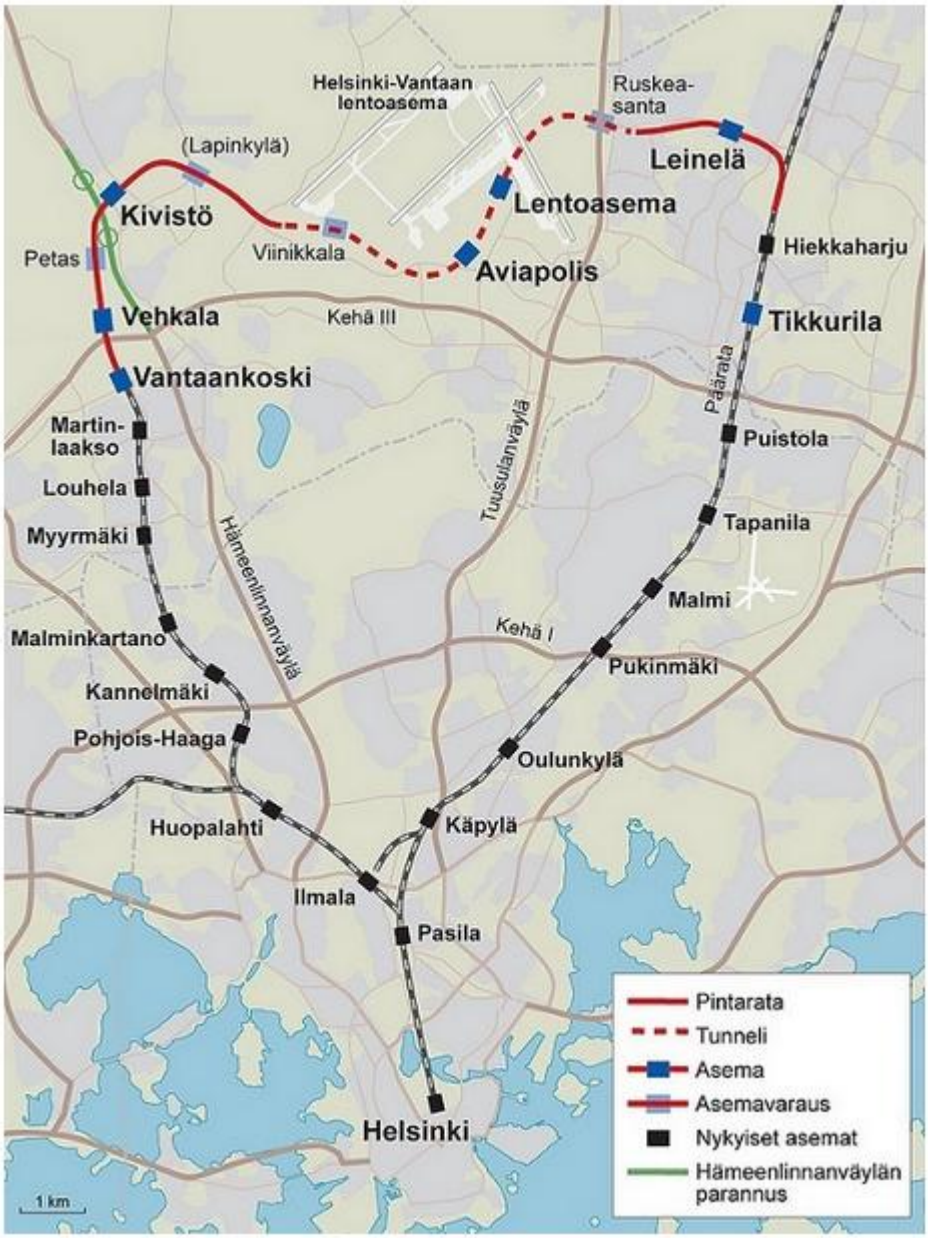

Figure 11. Ring Rail Line (Finnish Transport Agency 2014)

4.4.3 Airport as the business hub

Connections provided by the Airport together with its road links and soon also the rail line, create a perfect environment for developing a variety of businesses in the area. Nowadays, "airports are drivers of growth, attracting the sales and marketing functions of international companies to the area, logistics firms operating in passenger and freight traffic, as well as providers of health and well-being services" (Aviapolis 2014), so is also the Helsinki Airport. The city districts of Vantaa which are in direct neighborhood of the Airport have been evolving and at the present have merged into one

business district of Aviapolis. The map below presents the city of Vantaa with the boarders of city districts, and shows that the area of Aviapolis lies in the central part of the city.

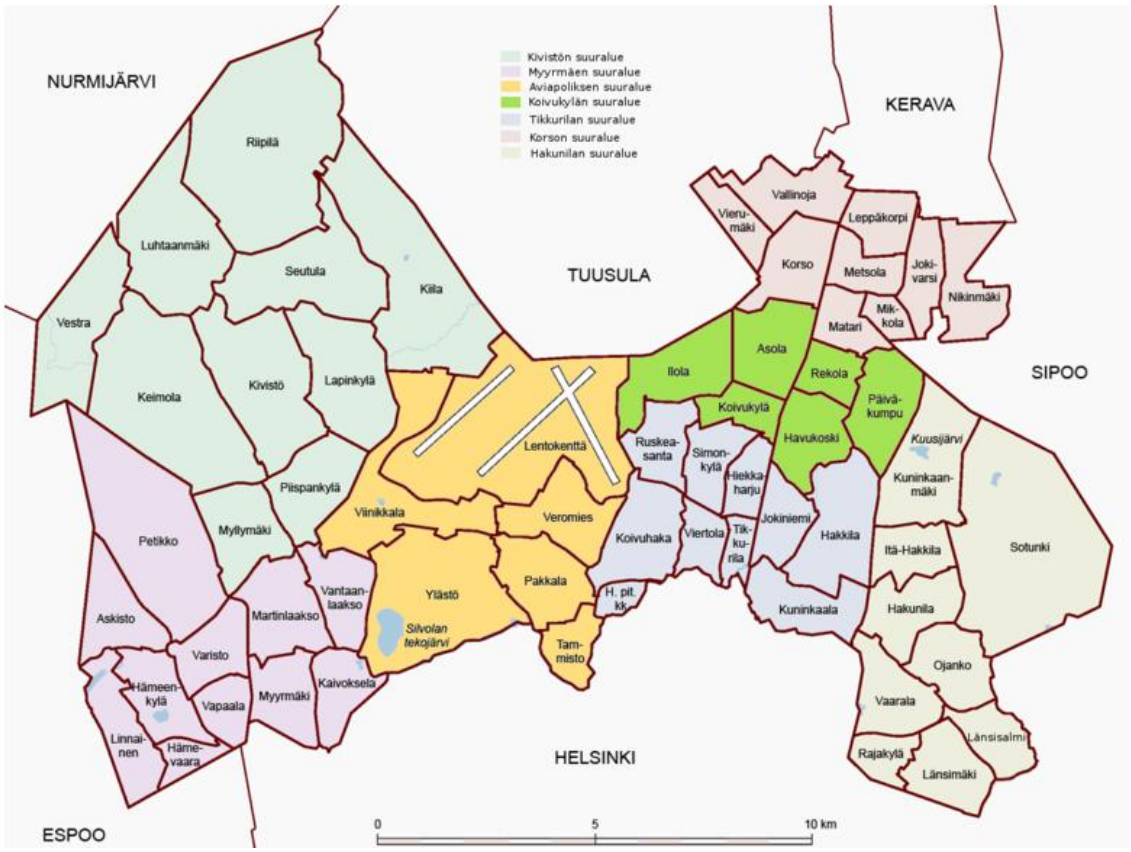

Figure 12. Map of Vantaa with city districts (Koistinen 2009)

The total area of Aviapolis covers 42 km², at the moment it is a place of employment for 35,000 and a place of residence for over 16,000 people with a constantly growing index (Aviapolis 2014). Currently it is the most international business district in Finland and also the most important logistic center in the country. It is a perfect location for worldwide known enterprises, which have decided to open a business hub here, and also an advantageous place for start-up businesses. In addition, the area attracts people to spend their leisure time and live there too, thanks to the big shopping center, spa and wellness facilities, bank branches, schools and other services of a daily need. The future plans for this particular region involve expansion of the residency area with parks and green spaces as well as continues development of its business oriented facilities. The potential of this place could not be achieved without such a neighbor as the Airport, because 98% of total passenger air traffic passes through this area, it states as a representative region of the country (Aviapolis 2014).

4.4.4 Airport versus noise and emission issues

The issues of noise and emissions have been a challenge since the very beginning of aviation boom. At the moment the goal of each airport is to reduce noise and emissions, despite the substantial increase in traffic volume with each year. This is not only airports' good will towards environmentally friendly operations, but also it is regulated and required by various organizations including IATA, European Union's Environmental Noise Directive, and country's internal laws. Helsinki Airport's methods for airplane noise control involve actions of flight route planning and use of runways. The biggest goal is to have as few inhabitants as possible who are affected by airports noise. To reach that goal from mid-November 2013 the Airport has changed landing methods for airplanes. Since then, the intermediate approach height of runway 1 was increased by 330 meters, and the intermediate approach height of runway 3 was decreased by 270 meters, which significantly improved the noise control over runway 1 that serves 30% of all landings (Finavia 2013). The objective of those changes are to reduce noise from landing airplanes and to cut emissions. Additionally, the Airport has incorporated continues decent approach, also called green landing. Almost 60% of all landings that take place at the Helsinki Airport use the method of continues decent, which brings the results of 10%-30% savings is fuel consumption, reduced carbon dioxide emissions by 640kg, and cut in aircraft noise as much as 10km away from the Airport (Finavia 2014e). The figure below presents the approach of green landing.

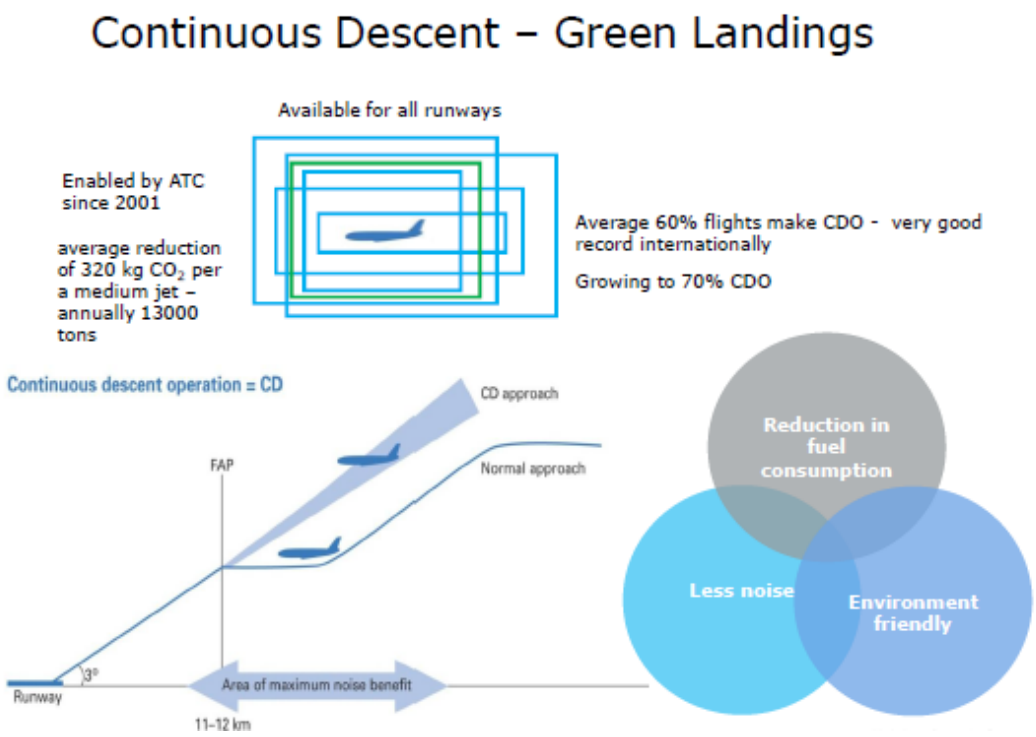

Figure 13. Continues decent- green landings (Finavia 2014b)

When taking under consideration the emission issues that are generated around the airport, it is a result of few factors: aircrafts, ground handling companies, cargo terminals, and other companies operating within the airport area. Emissions and energy consumption in Finland is calculated and controlled by LIPASTO system of VTT Technical Research Centre (Finavia 2014f). Thanks to newer technologies and changes in the airplane construction the emission levels have been constantly decreasing. Also Helsinki Airport and its operator Finavia participates in various programs that aim to decrease the pollution level at the airport and its surrounding area. For instance the aircraft emissions are reduced thanks to short taxing times, no holding of aircrafts, and unconstrained take-offs (Finavia 2014b). Furthermore, the cooperation between air traffic control, airlines and airport results in minimum delays which also affects lower environmental impact. Carbon emissions are one of the very top issues for IATA also. In 2009 the aviation industry under the supervision of IATA has adopted a plan which aims to reduce impact of carbon emissions through:

1. "Improving fuel efficiency by an average of 1.5% annually to 2020
2. Capping net emissions through carbon-neutral growth from 2020
3. Cutting net emissions in half by 2050, compared with 2005." (IATA 2013, 34)

The timeline of this process is presented in the figure below:

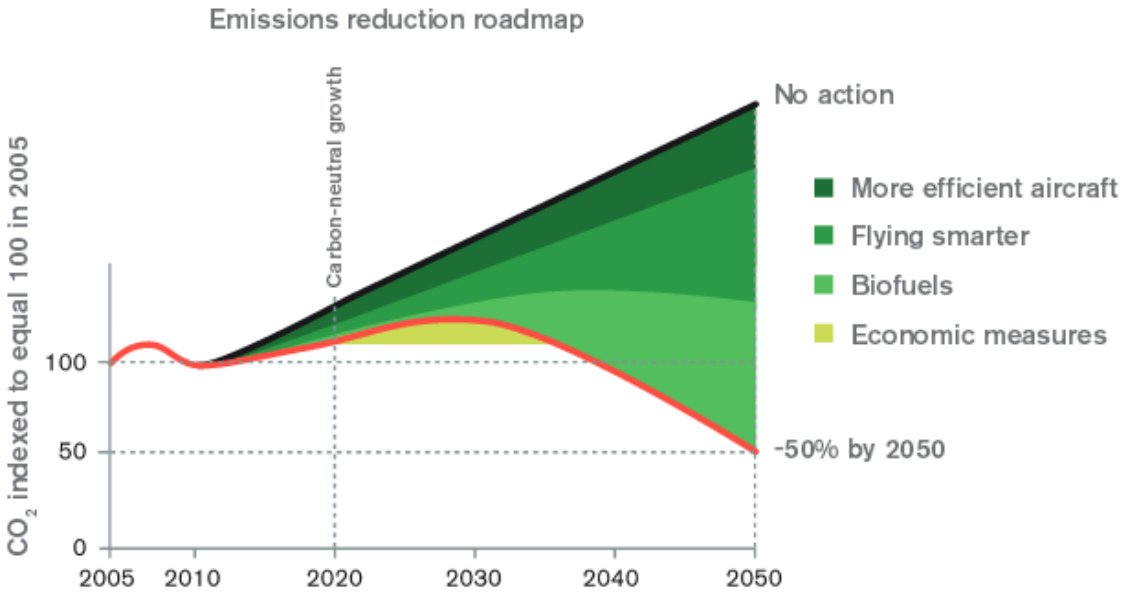

Figure 14. Emissions reduction roadmap (IATA 2013, 35)

The efforts to reach the following goals has been undertaken by the aviation industry as a whole. The progress is monitored on regular basis, also airport are offered help to follow up the program. One of the key points to reduction of emissions is usage of biofuel in aviation operations. Such trial flights had been also undertaken at Helsinki Airport.

4.4.5 Sustainable growth

A sustainable growth refers to a company that wants to achieve a maximum realistic growth without increasing financial leverage and creating economic problems. To reach the goal of serving 20 million passengers by 2020, Helsinki Airport has incorporated the development programme scheduled for 2014-2020. The whole investment is expected to cost 900 million euros, with a Governmental help of 200 million euros. One of the main aims of this development programme is to make Helsinki Airport position stronger on the traffic from Europe to Asia. In the first phase of this project the following actions have been undertaken (Finavia 2013g):

1. five new security check-points for the summer 2014
2. modernized check-in with 12 new desks and 10 bag drop machines

3. security check for every passenger in less than 15 minutes
4. new congress facilities.

Further investments may also involve airport's new infrastructure, such as new satellite terminal.

According to Helsinki-Uusimaa regional programme for 2040 the region is expected to be:

1. "the most competitive region in the Baltic Sea Region
2. one of the most important information technology utilizing innovation hubs for sustainable growth
3. making the most of its logistic position in the future triangle of the Gulf of Finland (Helsinki-Tallinn-Saint Petersburg)" (Uusimaa Regional Council 2014, 10).

In this programme also Helsinki Airport is named as the most vital part of the entire region, and Aviapolis as hub of logistic, business, employment and housing.

5 Conclusions and implications

5.1 Conclusions of the research and findings

This study has precisely followed chosen research model. In author's opinion, each of the stages met the objectives. However, the researcher sees that the core categories could be broken into even more detailed modules and analyzed adequately. The reason of such deficiency in comprehensive analysis is seen in rather short time frame of the research and relatively small number of conducted interviews. In researcher's point of view, more interviews would result in even deeper exploration of studied phenomena, although it would rather had not any significant impact on generated theory.

The research had constructed the theory which allocates Helsinki Airport among airport cities, but not among aerotropolis. This means that outcomes of the study are different from Kasarda's findings, which include Helsinki Airport to a group of world's aeorotropoli. However, the theory of this research has not been tested yet. The findings and supporting literature review had answered to the researched questions and gave in depth understanding of airport city and aerotropolis concepts.

The respondents agreed on the importance of airport accessibility within its catchment area. All of the constructions which are currently in their building phase will improve airport's accessibility once they are completed. This will result in fast and efficient connections to and out of the airport benefiting passengers, cargo carriers and employees of Aviapolis. The potential of the airport area as strong employer has been also noticed. Airport's urban area as international business player maintains strong position in the economics' of the country. It might result in future allocation of the city center of Vantaa from Tikkurila to Aviapolis. Furthermore, it is expected that airport will maintain its strong position and high performance in the national market, due to its plans of expansion under the "development programme 2020". By taking all those reasons under consideration, the researcher believes that Helsinki-Vantaa Airport will be a significant player among world's aerotropolis in the near future with its competitive advantage of direct connections to Asia.

5.2 Challenges of the study and limitations

This study fulfills the requirements for originality, because it opens a new discussion, brings up new insights, and touches current ideas. It has drawn links between various concepts and their dependence on different deciding bodies. According to Charmaz (2006, 183) "a strong combination of originality and credibility increases resonance, usefulness, and the subsequent value of the contribution." Despite that, the researcher had found few challenges on the way of research process. Some level of uncertainty accompanied the researcher throughout the whole process, due to lack of experience in this type of research. It was also rather challenging to schedule interviews with chosen group of respondents by reason of their busy schedules. People who host the highest positions within organization have very limited time to spend on someone else's research. Also quite narrowed time for conducting the research had resulted in relatively small number of respondents. Since there are no similar studies related to Helsinki Airport and its urban area, this thesis may lack in comparison with other studies and discussion between the sources.

In case of any research method there is a number of limitations and risks associated with a study. According to Dey (1999 in Egan 2002) there are several open question related to usage of GT. For instance one aspect concerns objectivity of the researcher. Can the researcher stay objective while he/she is the one narrating the questions and selecting codes? There is another concern related to verification of the study. Can the theory be verified while it is discovered? Glaser (1978 in Goulding 2001), one of the founders of GT, talks about phenomena called "the drugless trip". He claims that it occurs when the researcher faces difficulty in finding links between the data. The process of simultaneous data collection and interpretation may cause lots of difficulties. Especially for inexperienced researchers it may be hard and time consuming to move from the stage of open coding towards further data analysis and theory building process. Therefore the analyst's skills and experience may affect the quality of research through incorrect interpretation of qualitative data (Daengbuppha et al. 2006). Another important aspect relates to premature closure of the study (Skodal-Wilson and Ambler-Hutchinson 1996 in Goulding 2001). When the saturation of data is reached in early process of data collection it can lead to premature closure of studied subject and leav-

ing the study with some missing links, which can later affect the theory itself. Moreover, the nature of theoretical sampling, which cannot be identified prior the study, may affect the timeline and the budget of research. To conclude, GT brings uncertainty up to some extent and usually requires a long time commitment.

5.3 Ethical considerations

While conducting a research a very important issue is ethics. According to Saunders, Lewis, and Thornhill research ethics "relates to questions about how we formulate and clarify our research topic, design our research and gain access, collect data, process and store our data, analyze data and write up our research findings in a moral and responsible way" (2007, 178). Therefore, research ethics apply to every stage of the research process. The summary of key questions concerning ethics, by the authors, can be stated as follows (Saunders et al. 2003 in Neville 2007, p 34):

- the rights of privacy of individuals
- voluntary nature of participation- and the rights of individuals to withdraw partially or completely from the process
- consent and possible deception of participants
- maintenance of the confidentiality of data provided by individuals or identifiable participants and their anonymity
- reactions of participants to the ways in which researchers seek to collect data
- effects on participants of the way in which data is analyzed and reported
- behavior and objectivity of the researcher.

This research fulfils all of the above points, what is more, it does not affect negatively the participants or the organizations they represent. The participating parties were informed about confidentiality issues and the use of collected data. The participation in the study was voluntary. The participants had the right to decline to answer a question or set of questions, or to withdraw from the research at any time without giving a reason. Moreover, the participants had control over the right to record any of their responses where the voice recorder was used. There were no consequences nor possible

risks from participation in the research. The information provided by the interviewee was assured to be confidential and anonymous.

Further on, the guidelines on Research Ethics established by the National Advisory Board at the Finnish Academy have been also complied. Additionally, this research has followed Haaga-Helia guidelines for writing bachelor thesis, meaning that the study has been planned, carried out and reported in order to meet those standards. The literature review used for the purpose of the study has been stated and quoted in a clear manner and respectfully towards to the original source. The rights of use of the collected data and research's results has been discussed with the participants prior the research has been conducted. Lastly, availability and storage of the final paper was also discussed with the participants, stating that it will be accessible through Haaga-Helia thesis database and online at Open Repsitory of the Universities of Applied Sciences (theseus.fi).

5.4 Recommendations and learning outcomes

The concepts of airport city and aerotropolis are relatively new therefore they create a great ground for research. They have also not yet been criticized adequately, especially from long term planning perspective. For instance, Charles et al. argue that air travel depends on rising oil prices, which indirectly can affect development of aerotropolis (Hyer 2013). Thus its future is dependent on non-renewable energy sources. Even though flying had become cheaper for people, it is yet too expensive to transport greater parts of commodities, which are still transported by rail or by sea. There are also some concerns related to security. Nowadays, commercial aircrafts and airports are at high risk of terrorist attacks, having on mind the accidents from not so far history. The information about bomb set up at airport or airplane is not an uncommon fear of travelers. This could awake some concerns related to concentration of important infrastructure and thousands of people in one limited location. All of these reasons open a great discussion and could result in number of researches.

This thesis research has been a long journey to the researcher, which had started already in 2012, when the she came across the concept of aerotropolis. The idea of research topic and finding a suitable method had emerged in over a year. One of the

main outcomes was getting to know the insights of grounded theory as a research method. Very rarely a long-lasting project goes without any obstacles on the way. Also in this case the researcher met few milestones hard to overtake. Despite them, the study reached its aims and ending. Perhaps researcher's personal interests helped in finalizing the project and in keeping it interesting. Throughout the whole process, the author got in touch with many interesting people, who brought new inspiration and energy to the project. Hopefully the outcomes will be useful for other researchers and could help them in developing new theories.

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Attachments

Attachment 1: Interview protocol

INTERVIEW PROTOCOL

Background of the study

In Amsterdam Dutch planners have a saying:

The airport leaves the city.

The city follows the airport.

The airport becomes the city.

This trend of airports' growth and rising importance of the catchment area have broaden the role of airports in general. Growing importance of Helsinki-Vantaa International Airport influenced a great transformation of the capital's urban area. This research aims to examine the factors of airport's development and explain the future plans of the airport's urban area.

Researcher: Dominika Klos

Purpose of study: Bachelor thesis research

About the researcher: The researcher is a final year student of Degree Programme in Experience and Wellness Management in HAAGA-HELIA UAS. She has specialized in Aviation Management and achieved Airport Management certificate issued by Internationale Fachhochschule Bad Honnef-Bonn, Germany.

Implications and participant's rights: The participation in the study is voluntary. The participants have the right to decline to answer a question or set of questions, or to withdraw from the research at any time without giving a reason. Moreover, the participants have control over the right to record any of their responses where the voice recorder is used. There are no consequences nor possible risks from participation in the research. The information provided by the interviewee is confidential and anonymous, and will not be used against nor to harm the respondent. The interview is record-

ed, also notes are taken by the interviewer. Approximate time of the session is 30 minutes.

Opening the interview:

Name:

Position:

Company:

Sector:

Years in company:

Interview date and place:

Code:

Structure of the interview:

These following issues will be the core of the interview:

- your tasks and role in the company
- airport's development strategies
- role of an airport as a business hub
- airport's urban area (businesses around the airport, competition)
- airport's accessibility in the catchment area
- noise and emission issues in relation to residential area
- sustainable "smart growth" (environmental issues)

Use of data: Collected data will be used only for the purpose of this given research and access will be given to the researcher only. The responses will be coded and shall never be associated with the name of respondent. After the data is collected and analyzed, the recorded interviews will not be stored at any devices and shall be deleted. After the study is completed, it will be available in HAAGA-HELIA thesis database and online at Open Repository of the Universities of Applied Sciences (theseus.fi).

Researcher's contact information: In case of any questions related to this research, do not hesitate to contact the researcher directly.

Dominika Klos

Tel: +358 46 882 4842

E-mail: dominika.klos@myy.haaga-helia.fi