DESIGNING A NEW ARCHITECTURAL PROGRAM: THE NORMS AND ATTRIBUTES OF REGIONAL AIRPORTS; KÜTAHYA-AFYONKARAHİSAR-UŞAK

A THESIS SUBMITTED TO
THE GRADUATE SCHOOL OF NATURAL AND APPLIED SCIENCES
OF
MIDDLE EAST TECHNICAL UNIVERSITY

BY

ASLI APAYDIN

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR
THE DEGREE OF MASTER OF ARCHITECTURE
IN
ARCHITECTURE

DECEMBER 2007

Approval of the thesis:

**DESIGNING A NEW ARCHITECTURAL PROGRAM:
THE NORMS AND ATTRIBUTES OF REGIONAL AIRPORTS;
KÜTAHYA-AFYONKARAHİSAR-UŞAK**

submitted by **ASLI APAYDIN** in partial fulfillment of the requirements for the degree of **Master of Architecture in Architecture, Middle East Technical University** by,

Prof. Dr. Canan Özgen _____
Dean, Graduate School of **Natural and Applied Sciences**

Assoc. Prof. Dr. Güven Arif Sargın _____
Head of Department, **Architecture**

Assoc. Prof. Dr. Güven Arif Sargın _____
Supervisor, **Architecture Dept., METU**

Examining Committee Members:

Prof. Dr. Ali İhsan Ünay
Construction Education Dept., Gazi University _____

Assoc. Prof. Dr. Güven Arif Sargın
Architecture Dept., METU _____

Assoc. Prof. Dr. Zeynep Uludağ
Architecture Dept., Gazi University _____

Ins. İlhan Kural (M. Arch)
Architecture Dept., METU _____

Yakup Hazan (M. Arch)
Hazan Mimarlık _____

Date: 07/12/2007

I hereby declare that all information in this document has been obtained and presented in accordance with academic rules and ethical conduct. I also declare that, as required by these rules and conduct, I have fully cited and referenced all material and results that are not original to this work.

Name, Last Name: Aslı Apaydın

Signature :

ABSTRACT

DESIGNING A NEW ARCHITECTURAL PROGRAM: THE NORMS AND ATTRIBUTES OF REGIONAL AIRPORTS; KÜTAHYA-AFYONKARAHİSAR-UŞAK

Apaydın, Aslı
M. Arch., Department of Architecture
Supervisor: Assoc. Prof. Dr. Güven Arif Sargın

December 2007, 149 pages

Today's dynamics - the globalization process, economic growth together with late-capitalism, the number of population living in cities and improvements in technology, communication and electronic media - have changed the course of air transportation. As the demand for aviation has increased, the policy of "regional air transportation system" has begun to be extensive through the world in order to provide an integrated and sustainable air transport system. As for Turkey, together with deregulation of air transportation system in 2003, the government has started the "Project of Regional Air Transport". In this respect, some new regional airports are put on the agenda, which required contemporary norms and attributes of regional airport terminals.

When regional airport terminals are examined, it is observed that they have typologies, all abstracted from their time-space frameworks. But, today's dynamic architecture attempts to alter this psyche of typology in order to create dynamic and indeterminate spaces in relation to instable transformations in contemporary cities.

However, through the restructuring process, in relation to the city context, the static and determinate architecture of regional airport terminal can be challenged. Namely, an architectural program can be utilized as a tool for creating a dynamic architecture. In this respect, by designing a new architectural program for Kütahya-Afyonkarahisar-Uşak Regional Airport Terminal, which is on the agenda of the government, this study firstly, examines the norms and attributes of regional airports and secondly investigates how the architectural program of regional airport terminals should be designed according to the needs of contemporary cities in the 21st century.

Keywords: regional airport terminal, architectural program, dynamic architecture, restructuring process.

ÖZ

YENİ BİR MİMARİ PROGRAM TASARIMI: BÖLGESEL HAVAALANI TERMİNALLERİNİN NİTELİKLERİ; KÜTAHYA-AFYONKARAHİSAR-UŞAK

Apaydın, Aslı
Yüksek Lisans, Mimarlık Bölümü
Tez Yöneticisi: Doç. Dr. Güven Arif Sargın

Aralık 2007, 149 sayfa

Günümüz dinamiklerini oluşturan küreselleşme, kapitalist örgütlenme, teknoloji ve iletişim araçlarındaki gelişmeler ve şehirlerde yaşayan nüfusun artması hava yolu taşımacılığına olan talebi arttırmıştır. Havacılığa olan bu talep artışına bağlı olarak, sürdürülebilir ve bütünleşik bir bölgesel havayolu taşımacığı politikası dünyada ve Türkiyede uygulanmaya başlanmıştır. Türkiye'de 2003 yılındaki havayolu taşmacılığında yapılan yeni düzenlemeyle, "Bölgesel Havayolu Taşımacılığı Projesi"'nin özellikle üzerinde durulmuş, ve bu proje doğrultusunda yeni bölgesel havaalanlarının yapılmasına karar verilmiştir. Ancak, bölgesel havaalanlarının yapısı ve özellikleri de gündeme gelmiştir.

Bölgesel havaalanları incelendiğinde, terminal yapılarının, bulunduğu yer ve zamandan soyutlanan bir çatkıya ve benzer tipolojiye sahip oldukları görülür. Bununla birlikte "dinamik mimarlık", değişkenlerin olduğu günümüzde, bu tipolojilerden hareket etmez.

Oysa ki, mimari programlarının yeniden oluşturulması ile, bölgesel havaalanı terminallerinin statik ve kesin mimarisine karşı çıkılabilir. Bir başka deyişle, mimari program, dinamik bir mimarlık elde etmek için bir araç olabilir. Bu anlamda bu çalışmada; Kütahya-Afyonkarahisar ve Uşak Bölgesel Havaalanı Terminali'nin mimari programı tasarlanarak, öncelikle bölgesel havaalanı terminallerinin yapı ve özellikleri incelenmekte ve 21. yy'da bir mimari programın nasıl tasarlanması gerektiği araştırılmaktadır.

Anahtar Kelimeler: bölgesel havaalanı terminali, mimari program, dinamik mimarlık, yeniden yapma süreci.

To my Family

ACKNOWLEDGEMENTS

I would like to express my sincere thanks and appreciations to Assoc. Prof. Dr. Güven Arif Sargın for the guidance and encouregements. It was pleasure working with him.

I also would like to thank Prof. Dr. Ali İhsan Ünay, Assoc. Prof. Dr. Zeynep Uludağ, İlhan Kural and Yakup Hazan for their critics and supports.

I also would like to convey my endless appreciation to my family and my friends for their confidence in me. Knowing that their support is always with me deserves special thanks.

And finally, I owe more thank to my love Gökhan Özdemir for his help in editing the text, also for his patience and motivating support.

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CHAPTER 1

INTRODUCTION

1.1 GENERAL VIEW

Having dynamic configurations, air transportation is influenced by economic growth, global development process and improvements in technology and communication equipments in the world, in recent times. With the effects of these advances of the era, people have started to live in a world that enlarges as it becomes smaller and the importance of time and speed has increased, which has demanded extensive air transportation. As the demand for air transportation has increased, the existing major airports have exceeded their available capacity. As a result, it is inevitable to expand air transportation network and adapt airports to recent developments. Generally, it is impossible to construct a second major airport in the city. Instead, many neighboring cities supply with feeder service to increase the major airport's capacity by using small turboprop aircrafts and turbo jets.[1] Namely, metropolitan cities improve their service by using regional airports.

Keeping in mind that airports influence much larger areas than the area of the airport's itself, they cannot be thought merely as air transport's ground station. They are focal points of transport and regional planning policies. All over the world, economic activities are associated with air transportation. Indeed, the competition between airports is

[1] Thomas Feldhoff. "Japan's Regional Airports: Conflicting National, Regional and Local Interests". Journal of Transport Geography, Vol, 10, 2002, pp: 249-258.

the sign of those activities among countries and cities.[2] So, it is important to adapt airports according to economic growth and global development process. In this sense, regional airport system is regarded as the best solution for integrated and sustainable air transport system in our age. Regional airports serve for major airports to provide passenger from their regions and also from major airports to their regions. That is to say that they spread the burden of major airports over the neighboring cities.[3] While the major airports benefit from reduced congestion, both on the ground and in the air, sub-regions find a place in the changing market conditions of late-capitalism.

All airports, including the international ones, serve their regions and are also dependent on their regions, which provide that the term of "regional airport" is ambiguous. The redistribution of air traffic to smaller airports is defined as "regionalization".[4] However, the term of regional airport changes according to the region's particular context. For example, in Japan, it is used for all airports located outside the three metropolitan regions.[5] As in UK, the term is used for the airports that serve primarily to their regions, but lack the international emphasis.[6] According to Final Report of General Directorate of State Airports Authority (DHMİ), regional airports are defined as the airports that have low-cost, regular scheduled service with sixty or less passenger capacity aircrafts.[7]

There are three main reasons to choose regional airports. Firstly, people prefer regional airports to special cars and buses, because of the short-travel-period. Secondly, in the regions where there is not any other transportation system, it is easy to construct and use small airports. Finally, when they travel to remote places, regional aircrafts are more advantageous than the other expensive systems. In addition, airport operators and local governments have considerable influence on traveler's decisions and also on formation of transport and regional planning policies.[8] As a consequence, the frequency of air service,

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[2] Ibid.
[3] Brian Graham and Clair Guyer. "The Role of Regional Airport and Air Service in the UK." Journal of Transport Geography, Vol 8, 2000, pp: 249-262.
[4] Julie Cidell. "Regional Cooperation and the Regionalization of Air Travel in Central New England." Journal of Transport Geography, Vol 14, 2006, pp: 23-34.
[5] Thomas Feldhoff. "Japan's Regional Airports: Conflicting National, Regional and Local Interests". Journal of Transport Geography, Vol 10, 2002, pp: 249-258.
[6] Ian Humphreys and Graham Francis. "Policy issues and planning of UK Regional Airports." Journal of Transport Geography, Vol 10, 2002, pp: 249-258.
[7] DHMİ, DHMİ Final Report, ERKA-AS &MMM, Ankara, CD-ROM, 2000.
[8] Thomas Feldhoff. "Japan's Regional Airports: Conflicting National, Regional and Local Interests". Journal of Transport Geography, Vol 10, 2002, pp: 249-258.

accessibility via ground transport and low fares encourage travelers to use regional airports.

1.2 AIM OF THE STUDY

Regional airports show basic characteristics of major airports. They are - almost without any difference - more or less the same through the entire world and non unique or none defined with society's history and culture.[9] Due to that, architecture takes its function and program from the city; instable transformations on urban dynamics affect architectural programs. In this context, when architectural programs cannot be restructured according to such transformations on the city, non-places are created. Defined as Supermodernism, our era creates non-places which are detached from the social, political and functional contexts of cities. Regional airports, like major airports, are part of those non-places, by having no identity, no history and no urban relationship.

Regional airports are the pick point of the modernist motto "form follows function", which is long favored by architectural discourse. They have rational and transparent plans to facilitate the accessibility and availability of airport systems. Also, they are standardized; no surprise spaces for the traveler to decline the gaps between airport system and traveler.[10] Besides, they are passages for large numbers of pedestrians and luggage among two modes of transportation from airside to landside. The circulation is constructed between these areas where travelers interact only with texts and share similar experiences to be alone.[11] Namely, regional airports are designed to pass through or wait for a plane by responding to the signs, guides and announcements. In other words, they are designed according to features of non-places.

However, there is a reciprocal relationship between the architecture and the city. While, the architecture is the background for a city, city constitutes the context of the architecture. Our time is defined by the disjunctions. Disordered and unstable social life of contemporary world creates "culture of disjunction". Such a disjunction between social

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[9] Ibid.
[10] Veronique Albert Gamet and Bernard Cova. "Servicescapes: From Modern Non-Places to Post-Modern Common Places." Journal of Business Research, Vol 44, 1999, pp: 37-44.
[11] Non Place. [WWW, Internet], Address: http://ace.caad.ed.ac.uk/NonPlace/ [Last Accessed: 07.08.2007].

values, use and forms and expected interchangeable combination of them create constant change and indeterminism or rather dynamism in the contemporary cities. So, architecture has become dynamic like the city in the era of Supermodern. In other words, the disjunctive culture transforms architecture into dynamic conception in opposition to static and determinate description of it.[12]

Dynamic architecture, attempts to challenge the non-places in order to create dynamic and indeterminate spaces in relation to "culture of disjunction". In this context, if the architectural program of non-places is restructured by taking the contemporary needs into account, they can be transformed into social spaces. As a result, this thesis aims to restructure the program of Kütahya- Afyonkarahisar-Uşak Regional Airport Terminal that is on the agenda of the government and then to attain the norms and attributes of regional airport terminals under contemporary developments.

1.3 THEORETICAL ISSUES AND METHODOLOGY OF THE THESIS

In the Supermodernist era, a new dynamic architecture generates the questions of what should be the new definition of architecture and its limits. In this context, "theory of disjunction" of Bernard Tschumi as a method for designing architecture in disjunctive world, will be used in this thesis. Thus, "theory of disjunction" becomes the "theory of designing a new dynamic architecture". In this respect, being a main tool for making architecture, program is created according to this theory.

In this study, author will try to find out how architectural programs are designed in relation to "theory of disjunction". In this manner, firstly the theory of architectural program in disjunctive world will be defined. According to this theory, combination of events creates an architectural program. While events form an indeterminate set of unexpected result, program is a determinate set of expected happenings. So, how indeterminate events supply determinate program or, how programs create events? In this context, firstly this study will examine the theory of architectural program in disjunctive world and then, a methodology of designing program will be attained. Finally, the process

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[12] Bernard Tschumi. Architecture and Disjunction. London, England: The MIT Press, 1996, pp:207-213.

for designing program will be applied for Kütahya-Afyonkarahisar-Uşak Regional Airport Terminal.

The following chapter will present a theoretical framework of regional airports. Airports are essential points on the global network. Nowadays, due to the aims of late-capitalist economy and globalization process, demand for air transportation has increased. Major airports have begun to be supplied by regional airports to respond those increasing demand. Thus, the concept of regional airports will be defined concerning different regions in particular context and development of regional airports throughout history will be analyzed with the help of examples in the world. Then, layouts, concepts, physical and structural systems and site selections of regional airports and their relations with the architectural program of regional airports will be analyzed.

In the third chapter, general view of airport system in Turkey will be described, and then recent advances of regional airport system will be examined. For the initial point of this part, DHMİ Final Study Report will be used. Besides, the studies of Ministry of Transportation, Government Port and Airfield Administration (DLHİ) and Civil Aviation Administration about regional airports will be emphasized.

The fourth chapter will contain the main problem of this study; boundaries of the problem will be examined. In this chapter, first of all, the concept of Supermodernism will be analyzed, by the help of the properties of current conditions like high-technology, advanced communication skills, late capitalist economy and globalization process. Then, the effects of Supermodernism on the cities and architecture will be analyzed. Next, the design theory of places and non-places will be explained.

The fifth chapter will be an inquiry into architectural design of regional airport terminals. Through the Kütahya-Afyonkarahisar-Uşak Regional Airport, which is on the agenda of DLHİ, this chapter investigates how architectural program should be designed, in order to transform non-places into places. In this manner, firstly this chapter will focus on the theory of architectural program in disjunctive world and then, the methodology of designing program will be attained. Finally, the process for designing program will be applied for Kütahya-Afyonkarahisar-Uşak Regional Airport Terminal Program. As a consequence, the norms and attributes of regional airports will be attained.

The last chapter will be the conclusion which will discuss the outcomes of an expected analysis.

CHAPTER 2

REGIONAL AIRPORT SYSTEM IN THE WORLD

2.1 GENERAL VIEW

When the speed, scale and glamour of modern world is of concern, air transportation has become incomparable with the other forms of travel, by providing millions of people and goods to market around the world quickly. This makes air travel one of the significant suppliers to the advancement of the modern society. Whereas aviation tenders the merely global transportation network, it provides more things than being a carrier service by offering economic growth particularly in developing countries and social benefits.[13] As for economic benefits, the air transportation creates employment and wealth by generating a total of 29 million jobs globally and 8% of world Gross Domestic Product (GDP) through its own direct and indirect functions and also affecting other industries.[14] (Figure 2.1) Air travel industry has "spin-off" impacts on the other industries like a catalyst by helping countries take part in the global market, supporting tourism, expanding the scale of world trade, encouraging the companies to choose the place they invest.[15] Namely, air transport has a vital role in the growth of global economy. In addition, the catalytic effects of air travel are much more than the combined direct, indirect and induced ones.

With respect to social benefits, air transport develops the quality of life by changing social and cultural perspectives, shaping political history, increasing the number of holiday

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[13] Air Transport Action Group, The Economic and Social Benefits of Air Transport, September 2005, p.2. [WWW, Internet], Address: http:// www.iata.org. [Last Accessed: 13.09.2007].
[14] Ibid.
[15] Ibid. p.6.

destinations and providing transportation on distant places, which enables to visit friends and relatives at remote areas and to integrate and understand different cultures. Besides, air transport has an important role in humanitarian aid-relief. Having a dynamic structure, while air transportation affects the life of societies; it is also influenced by the changing factors of societies.

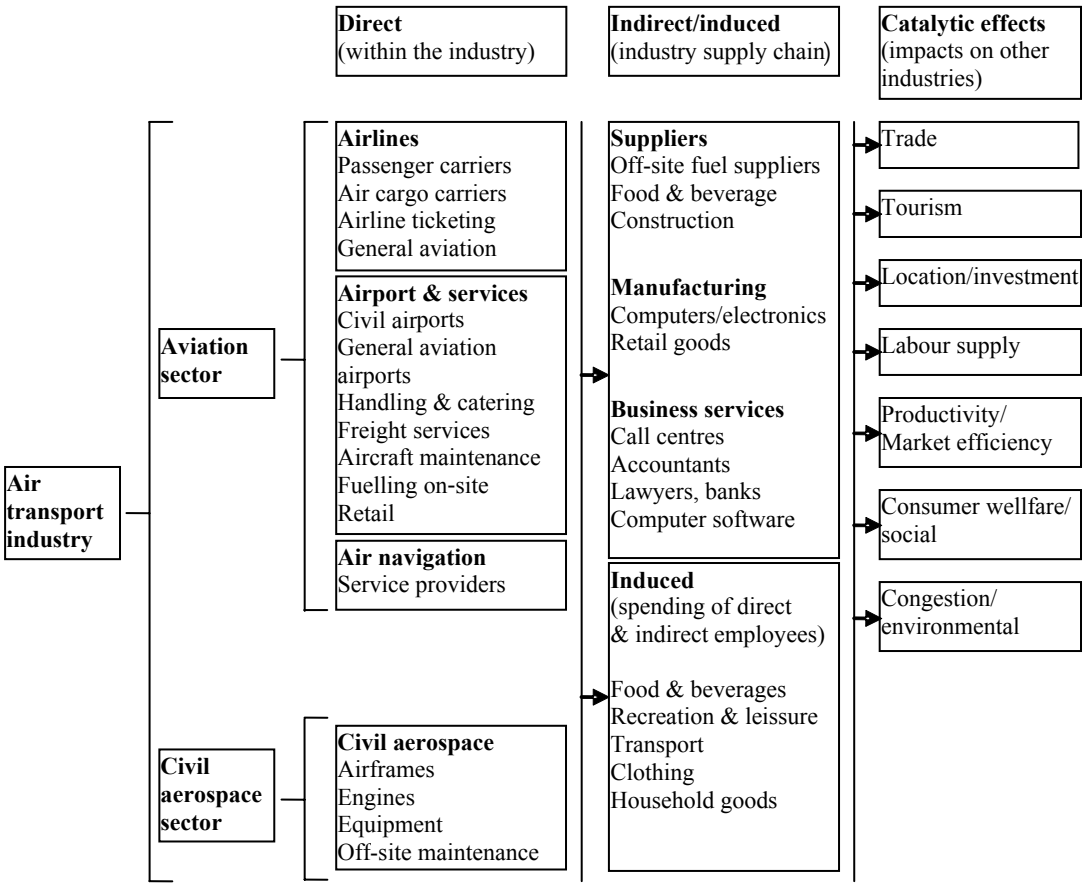

Figure 2-1 The economic effects of Air Transportation (Source: http:// www.iata.org.)

With the effects of globalization, deregulation, reduced air travel costs, development in aircraft industry and rising GDP, disposable income and living standards, the access to air transport industry gets easy and air travel has not been considered as a luxury service, any way. Accordingly, the demand for air travel has grown progressively

over the years (Figures 2.2 and 2.3). It can be seen from the research of International Air Transport Association (IATA) that the number of passenger of air travel has increased from 394 million per annum in 1990 to approximately 1010 million by the year 2010, in Europe.[16] The increasing accessibility of air transport has expanded the aviation's function in modern societies, which generated new policies and design objectives in air transport. In this respect, "Regional Air Transportation Policy" that provides low-cost and systematized network of air travel has been established in the 1980's, initially by USA and then Canada.[17] Since then, air transportation in the world has entered a transition period, by regional air transportation that can be defined as hub-and-spoke system.

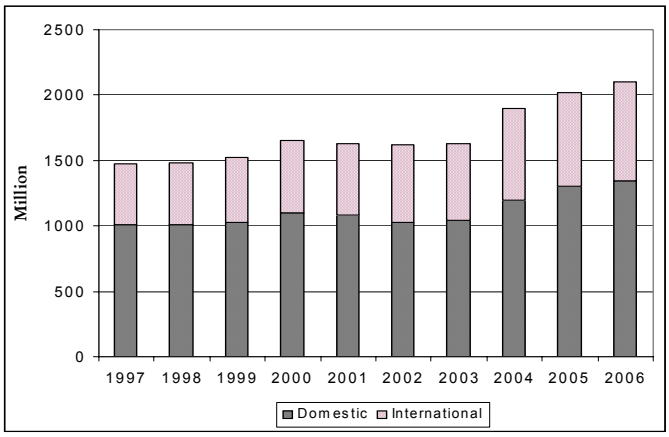

Figure 2-2 World Scheduled Traffic passenger carried (Source: http:// www.iata.org.)

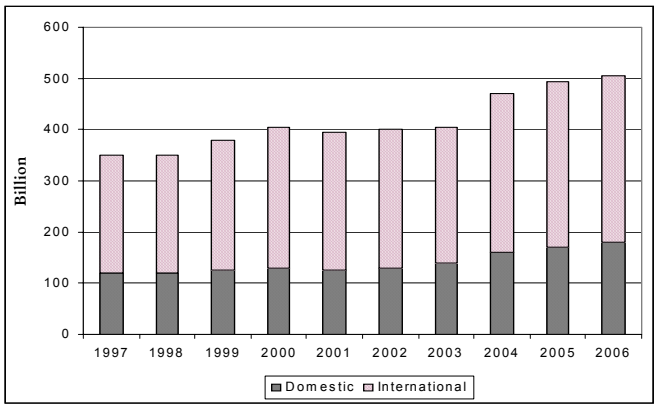

Figure 2-3 World Scheduled Traffic freight carried (Source:http:// www.iata.org.)

[16] Brian Edward, The Modern Airport Terminal. London, New York : Spon Press, 2005. p.12.
[17] DHMİ, "DHMİ Final Report", ERKA-AS &MMM, Ankara, CD-ROM, 2000.

2.2 REGIONAL AIR TRANSPORTATION (HUB-SPOKE SYSTEM)

Air transport provides benefits by allowing people and goods to travel from A to B (Figure 2.4). But, an air transport network provides significant additional benefits if it is also allows onward travel from B to points C and D (Figure 2.5), when a direct connection between A and C or D is not economically viable.[18] With the regional air transportation policy that redistributed air traffic to regional airports, many neighboring cities have begun to supply the major airports with feeder service by using small turboprop aircrafts and turbo jets, in order to create air transport network.[19] Thus, airport system has redefined its concept by generating hub-and-spoke system.[20] While hubs consist of major airports, spokes are constituted by regional airports. At this system, all passengers fly to a main point and then they are distributed via smaller aircraft to a number of smaller regional airports.[21] Namely, major airports improve their service by using regional airports, acting like satellite runways of them.

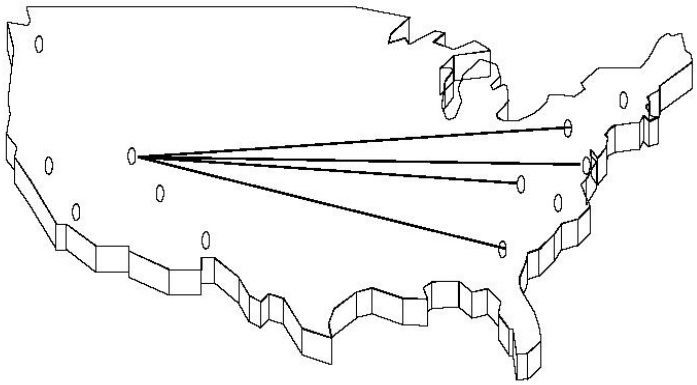

Figure 2-4 Point to point service (Direct flights, thin routes (low frequency, low load factor)

[18] Mark Smyth and Brian Perce, "Airline Network Benefits IATA Economics Briefing No:03.". IATA Economics, 2006. [WWW, Internet], Address: http://www.iata.org. [Last Accessed: 13.09.2007].
[19] Julie Cidell. "Regional Cooperation and the Regionalization of Air Travel in Central New England." Journal of Transport Geography, Vol 14 ,2006. pp: 23-34.
[20] Brian Graham and Clair Guyer. "The Role of Regional Airport and Air Service in the UK." Journal of Transport Geography.Vol 8, 2000. pp: 249-262
[21] Ibid.

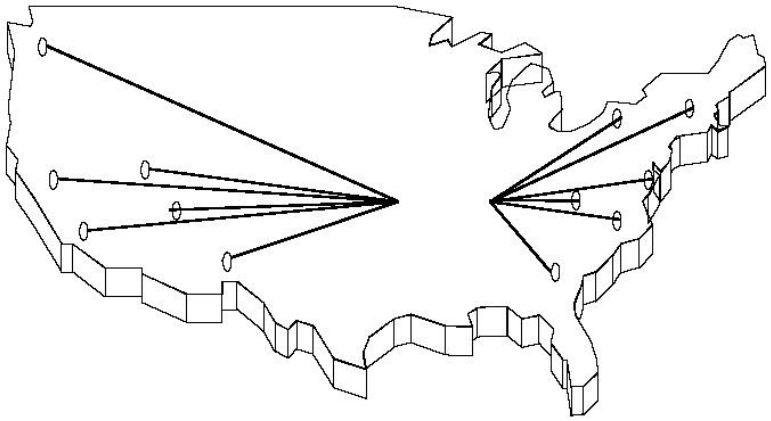

Figure 2-5 Hub-and-spoke service (Indirect Heavy Routes via Hub Central (high frequency, higher load factor)

Regional airports serve for major airports to provide passenger from their regions and also from major airports to their regions. That is to say that they spread the burden of major airports over the neighboring cities.[22] While the major airports benefits from reduced congestion, both on the ground and in the air, sub-regions find a place in the changing market conditions. While the redistribution of air traffic to smaller airports is defined as "regionalization", the term of regional airport is a little bit ambiguous.[23] The concept of "regional airport" changes according to the region's particular context. For instance, in Japan, it is used for all airports except the three metropolitan airports.[24] On the other hand, in UK, "regional airport" term is used for the airports that serve primarily to their regions. However, these regions are far away from having an international emphasis.[25] To determine the borders of regional airports in Turkey, DHMİ present a report about this topic. According to Final Report of DHMİ, it is defined as the airports that have low-cost, and

[22]Brian Graham and Clair Guyer, "The Role of Regional Airport and Air Service in the UK." Journal of Transport Geography.Vol 8, 2000. pp: 249-262.
[23]Julie Cidell, "Regional Cooperation and the Regionalization of Air Travel in Central New England." Journal of Transport Geography, Vol 14, 2006. pp: 23-34.
[24] Thomas Feldhoff, "Japan's Regional Airports:Conflicting National, Regional and Local Interests." Journal of Transport Geography. Vol 10, 2002. pp:165-175.
[25] Ian Humphreys and Graham Francis, "Policy Issues and Planning of UK Regional Airports." Journal of Transport Geography. Vol 10, 2002. pp: 249-258.

regular scheduled service with sixty or less passenger capacity.[26]

In recent years, commuter airports with business flight and low-cost airlines have affected improvement of regional airports. Commuter airports serve for business flights that fly generally from one financial point to another, relatively frequently.[27] As a good example, in Japan, commuter airports in metropolitan cities improve their service by using regional airports. These cities namely, Tokyo, Osaka and Nagoya, are dependent on an efficient, high capacity, globally oriented air transportation system in order to exchange of people and goods rapidly on a national or international scale. Nevertheless, they are not sufficient to meet these demands and they are about to lose their position in the international city hierarchy. Therefore, the immense investments have required to meet this increasing demand and regional airports try to help these metropolitan cities by combining their aviation potential with that of neighboring cities.[28]

All of the developments in the air transport system point out the need for a new breed of smaller regional airports, which has the same properties with commuter airports for internal flights and short international hops. In consequence, there is a rapid growing subject of air transportation: regional airports designing "more environmentally, friendly and more popular than the centralized model, which was, anyway, an artificial construct based on either subsidized state airlines or monopolistic private carriers."[29]

There are visibly large differences in the regional airport types. While Jyvaskyla airport, by Pekka Helin and Tuomo Siitonen, in Finland carries fewer than 250.000 passengers per year, Venice airport carries 6.5 million passengers, which is nearly the same number as the new Austin-Bergstrom International airport at Texas, by Gensler architects.[30]

Considering the overall definitions and classifications of regional airports, they serve by generalized four categories: scheduled domestic passenger, scheduled international passenger, passenger charter, freight and general aviation.[31]

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[26] DHMİ, "DHMİ Final Report", ERKA-AS &MMM, Ankara, CD-ROM, 2000.
[27] Hugh Pearman. Airports: A Century of Architecture. London: Laurence King Publishing Ltd, 2004. p.166.
[28] Thomas Feldhoff, "Japan's Regional Airports:Conflicting National, Regional and Local Interests." Journal of Transport Geography. Vol 10, 2002. pp:165-175.
[29] Hugh Pearman. Airports: A Century of Architecture. London: Laurence King Publishing Ltd, 2004. p.195
[30]Hugh Pearman. Airports: A Century of Architecture London: Laurence King Publishing Ltd, 2004. p. 184.
[31]Brian Graham and Clair Guyer, "The Role of Regional Airport and Air Service in the UK." Journal

2.2.1 Scheduled Domestic Passenger

Several regional airports are dependent on this market. There are two levels of scheduled domestic passenger market. At the first level, airports serve for major airports to provide passenger from their regions and from major airports to their regions. For instance, any airline company may take off from a regional airport with 10 to 20 passengers, then land to major airport, finally take off for a nonstop trip to somewhere else. This level of air transportation feeds the major airports. Moreover, it reduces the air traffic congestion. With regard to second level, they serve directly between the cities all over the country.

2.2.2 Scheduled International Passenger

The scheduled international passenger market is more restricted in comparison with the others. Regional airports are not only restricted by domestic flights, but also serve for international air traffic network. For instance, owing to the fact that Tokyo and Osaka have insufficient air traffic capacity, new airlines that request to enter the Japanese market were compelled to move their operations to the regional airports.[32]

2.2.3 Passenger Charter

Regional airports serve also for non-scheduled passenger traffic. The dependence on this market changes from airport to airport. "Charter passengers are prepared to travel some distance by surface in order to obtain cheaper holidays and a wider choice of destinations than those offered from scheduled passenger markets." [33]

2.2.4 Freight and General Aviation

Generally freight operations rely on night flights, which tend to have environmental

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of Transport Geography.Vol 8, 2000. pp: 249-262.

[32] Thomas Feldhoff, "Japan's Regional Airports:Conflicting National, Regional and Local Interests." Journal of Transport Geography. Vol 10, 2002. pp:165-175.

[33] Brian Graham and Clair Guyer, "The Role of Regional Airport and Air Service in the UK." Journal of Transport Geography. 8 (2000) 249-262.

objections.[34]

Regional airports reduce the negative thought about air travel on the subject of "the length of time needed and be processed through the airport", by being relatively close to the communities they serve and having simple layout in comparison with major ones.[35]

2.3 THE FACTORS AFFECTING THE REGIONAL AIR TRANSPORT GROWTH

2.3.1 Globalization

Globalization to be a current process of the modernization provides the linking of people, goods, capital and information rapidly at universal level. With the effect of globalization process that is eventually relying on the communication revolution, high technology and universal market laws made the borders taken away and the world has been tightened spatially and temporally.[36] People start to live in a world which enlarges as it becomes smaller by the help of improvements in communication and transportation equipments.[37] Namely, global world is dependent on network offered by telecommunication and transportation.[38] Hence, to be one of the most important means of interconnection of modern industrialized societies by providing the realization of hereto-impossible trips and relations, air transportation is influenced by the economic growth and global development process in the world, which provides increasing of the demand for air transportation.[39]

The structure of air services designates the structure of economy. "A well designed air transport network is an essential infrastructural asset and is vital for economic development and growth."[40] Hence, the development of a globalised economy is dependent

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[34] Brian Graham and Clair Guyer, "The Role of Regional Airport and Air Service in the UK." Journal of Transport Geography.Vol 8, 2000. pp: 249-262.
[35]Hugh Pearman. Airports: A Century of Architecture. London: Laurence King Publishing Ltd, 2004. p.166.
[36] Evrim Demir. Airport Planning and Air Terminal Design : A proposal for the New Adana (Çukurova) International Airport. Master Thesis-METU, Ankara, 2002. p.7
[37]Ian Humphreys and Graham Francis, "Policy Issues and Planning of UK Regional Airports". Journal of Transport Geography. Vol 10, 2002. pp: 249-258.
[38]Civil Aviation Authority. "CAP 754 UK Regional Air Services". [WWW, Internet], Address: www.caa.co.uk. [Last Accessed: 13.09.2007].
[39] Air Transport Action Group, The Economic and Social Benefits of Air Transport, September 2005, p.2. [WWW, Internet], Address: http:// www.iata.org. [Last Accessed: 13.09.2007].
[40] Mark Smyth and Brian Perce, "Airline Network Benefits IATA Economics Briefing No:03.".

on hub-and-spoke system that functions world trade by providing companies to reach the global market and to get products more quickly and also to be more receptive to customer requirements[41] (Figure 2.6).

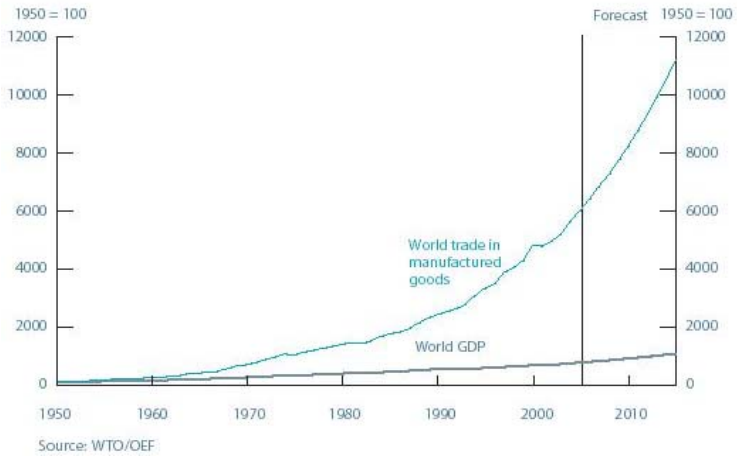

Figure 2-6 World Trade and GDP (Source: http://www.iata.org.)

Companies are affected by the structure of air transport when they choose the location for investing. According to a survey, 18% of firms' past investment decisions had been influenced by the absence of good hub-and-spoke system, especially in China having less-developed air network (Figure 2-7). Besides, air transport has impact on sales which can be seen in Figure 2-8. Air transportation creates and holds more than a quarter of all sales, particularly in High-Tech industry 40% of sales are maintained by air services, which indicates the vital role of air transport in the "time-sensitive, high-value nature of products".[42]

At present, hub-and-spoke system is important for businesses, half of which will be more dependent on air services over the next ten year, especially in the countries expecting

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IATA Economics, 2006. [WWW, Internet], Address: http://www.iata.org. [Last Accessed: 13.09.2007].

[41] Air Transport Action Group, The Economic and Social Benefits of Air Transport, September 2005, p.2. [WWW, Internet], Address: http:// www.iata.org. [Last Accessed: 13.09.2007].

[42] Mark Smyth and Brian Perce, "Airline Network Benefits IATA Economics Briefing No:03.". IATA Economics, 2006. [WWW, Internet], Address: http://www.iata.org. [Last Accessed: 13.09.2007].

the development in GDP and economy, together with the ones having low level of air transport network.[43]

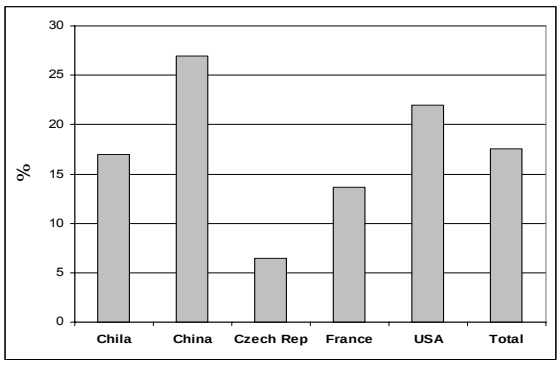
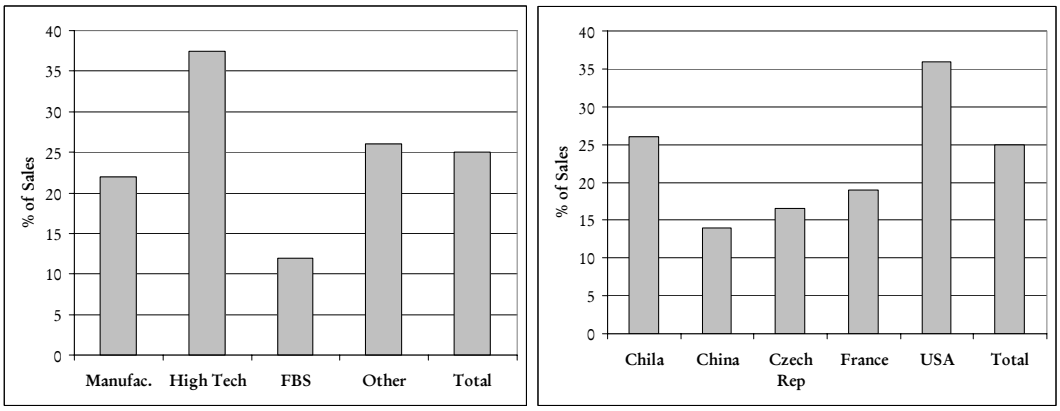


Figure 2-7 "Has the Absence of Good Air Transport Links Ever Affected Investment Decisions? - Percentage Responding Yes" (Source: http://www.iata.org.)

At present, hub-and-spoke system is important for businesses, half of which will be more dependent on air services over the next ten year, especially in the countries expecting the development in GDP and economy, but also having low level of air transport network.[44]



(a) (b)

Figure 2-8 Proportion of Sales Dependent of Quality on Go Air transport Links (Source:http://www.iata.org.)

[43] Ibid.
[44] Ibid.

2.3.2 Deregulation

Even though, air transport is "an enabler of globalization", namely it must have had international rules, aviation industry has long remained under the restrictive control of nations, which is impossible for the other parts of global world.[45] At this point, the concept of deregulation has come into scene and created liberalization that removes the limits on market access by reducing the role of government on air transportation and also transformed the air services in the regions into active and much expanded network of services. Beginning with the US domestic air market in 1978, and then keeping up with the Europe in 1980 and in 1993 by the European Union, deregulation has still been realized by other regions gradually.[46] Being consumer oriented deregulation provides cheap fares, speed and access and frequency of services designates the profit levels and criteria for efficiency, instead of government. Thus, deregulation has stimulated the sudden increase of air transport by offering competition, rationalization and low price.[47] (Tables 2-1 and 2-2) The competition between airlines and airports has provided price cuts on routes. With the effects of deregulation in the airport market, the low-cost/no-frill carriers have entered the market.[48] Consequently, deregulation leads new entrance of airlines with lower fares and more flights.

Table 2-1 The flight prices of UK Business (Source: www.caa.co.uk.)

UK BUSINESS	Aberdeen			Glasgow			Edinburgh		
	1990	2001	2003	1990	2001	2003	1990	2001	2003
Heathrow	£177	£255	£230	£145	£221	£202	£148	£225	£194
Gatwick	£153	£240	£174	£137	£207	£163	£135	£196	£128
Stansted	-	-	-	£143	£111	£81	£140	£119	£90
Luton	-	£100	£110	-	£91	£84	-	£100	£91
London City	-	£245	-	-	£203	£231	-	£212	£210

[45] Civil Aviation Authority. "CAP 754 UK Regional Air Services". [WWW, Internet], Address: www.caa.co.uk. [Last Accessed: 13.09.2007].
[46] Ibid.
[47] Ibid.
[48] Brian Graham and Clair Guyer, "The Role of Regional Airport and Air Service in the UK." Journal of Transport Geography.Vol 8, 2000. pp: 249-262.

Table 2-2 The flight prices of UK Leisure (Source: Civil Aviation Authority, CAP 754 UK Regional Air Services, www.caa.co.uk., 2005.)

UK LEISURE	Aberdeen			Glasgow			Edinburgh		
	1990	2001	2003	1990	2001	2003	1990	2001	2003
Heathrow	£115	£146	£104	£97	£90	£92	£107	£94	£90
Gatwick	£107	£113	£101	£90	£91	£90	£94	£103	£70
Stansted	-	-	-	£104	£55	£60	£98	£64	£64
Luton	-	£79	£76	-	£65	£61	-	£73	£59
London City	-	£91	-	-	£143	£107	-	£97	£115

Firstly, the liberalization of air services has provided new and existing airlines to develop new chances and the extension of no-frills airlines quickly, which changed the structure of airline business, especially on short-haul routes. Secondly, new services have begun to respond the demand from passengers desiring to travel from their regional airports, rather than from the major ones that is far away. For the last one, the appearance of regional airport has been changed to be able to growth, by the changing of ownership of them.[49]

2.3.2.1 No-frill/low cost carriers (LCC):

With the liberalization, low cost carriers that provide opportunities to increase traffic and market entrée for scheduled flights by the help of low flight prices have started to set up bases at regional airports. For example, Ryanair, easyJet, Go and Buzz have based their path on the main South East Airports in UK such as Stansted and Luton that grows rapidly.[50] Although, the air services indicate differences from region to region, there are standard characteristics of no-frills airlines. These are:

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[49] Civil Aviation Authority. "CAP 754 UK Regional Air Services". [WWW, Internet], Address: www.caa.co.uk. [Last Accessed: 13.09.2007].
[50] Ian Humphreys and Graham Francis, "Policy Issues and Planning of UK Regional Airports". Journal of Transport Geography. Vol 10, 2002. pp: 249-258.

- "- a fleet comprising a single aircraft type of Boeing 737 or A319/320 size (i.e. in the range of 100-189 seats)
- high aircraft utilization, including fast turnroads, use of secondary airports at one or both ends.
- aircraft configured for max. seat capacity with no premium class.
- high seat factors.
- rich staff productivity
- no explicit provision for passenger to connect between flights or interline with other airports
- low distribution costs through direct sales via the internet without tickets, booking through Global Distribution System or travel agents.
- removing complex or restrictive fare rules
- charge for snacks and drink
- no beliyhold cargo."[51]

2.3.2.2 Changes in demands for travel:

There are some changes in general transportation system and air transport's own system. As for transportation system, globalization, high technology, "rising GDP, disposable income and living standards" and deregulation on air transport system which provided competitiveness, low fares, new markets and more tourist and business demand have affected the passengers using other modes of travel.[52] Namely, passengers who traveled by car, bus or train previously, have begun to use aircrafts, which created a growth on air travel. For example, while a weekend trip is impractical by road or rail, it may be viable by air, because of either low-cost or journey time or both of them. In this sense, it has been important to adapt airports according to this growth. Besides, air travel towards the highland and island regions where the other alternatives to link the region is difficult or takes lots of time, is of importance. To sum up, nowadays, passengers tend to take short holidays that are feasible by air travel.

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[51] Civil Aviation Authority. "CAP 754 UK Regional Air Services". [WWW, Internet], Address: www.caa.co.uk. [Last Accessed: 13.09.2007].
[52] Air Transport Action Group, The Economic and Social Benefits of Air Transport, September 2005, p.2. [WWW, Internet], Address: http:// www.iata.org. [Last Accessed: 13.09.2007].

With regards to changes in the industry of air transport, there are alterations in charter carriers and business service. In the 1990's, the concepts of airline business models designated, which made traditional scheduled airlines suggest a "network-based product" for business passenger and the rich leisure and visiting friends and relatives (VFR) passengers, low cost carrier (LCC) fly point to point with basic quality and low prices that affects several leisure and VFR tourists, while, charter airlines were in-between them.[53] But nowadays, the differences of the three modes of services are not easy to understand, due to many airlines carry out all of them. Namely, there is osmotic concept of air travel.[54] Even so, there are some differences in terms of network configuration and airport selections. Whereas, the traditional scheduled carriers provide a widespread network by using hub-and-spoke system, LCC concentrate on mainly point to point services. While, regional airports have minor role in the former by feeding the major airports, as for the latter they choose regional airports first and foremost to advantage from low airport fees and station prices. To illustrate, while Ryanair pays 4.25 Euro per departing passenger and no landing charges at Frankfurt Hahn, a B737 operator pays 13 euro and a landing fee of about 1.75 euro at Frankfurt Main. Namely, LCC have the advantageous of operating from regional airports for point to point services.[55] Besides, charter carriers have begun to organize operations like LCC. In the contemporary air transport market, LCC have the major role.

Then, LCC providing basic quality service and flowing to regional (secondary) airports substituted the charter ones. Until the 1990, charter was the main service for leisure travel in Europe. Low-cost carriers generated from charter ones providing low fares. Especially, visiting friends and relatives (VFR) traffic was based on traditional scheduled model for students and immigrants that fly during the year straight to major cities and provided a seasonal alternative with low cost prices by charter carriers. This alteration affected the tendencies of air travel. Leisure traffic is constituted by trips comprised of short-break tendency that constructs new peaks during weekends and related with generally singles and people that have no children, namely are "better off but time constraint" and long-haul destinations. As for VFR passengers, they generally want to make last minute

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[53] Andreas Papatheodorou and Zheng Lei, "Leisure Travel in Europe and Airline Business Models: A Study of Regional Airports in Great Britain". Journal of Transport Management. Vol 12, 2006. p: 47-52.
[54] Ibid.
[55] Ibid.

travel arrangements, in terms of urgency. Also, present immigration in Europe increases the VFR traffic. [56]

Since the deregulation, no frills airlines have destroyed the fact that airlines got more revenue from business class providing regal and expensive service, by providing reliable, punctual and cheap services. Business passengers accepted a lack of frills especially on short journeys, which in turn, gets fare saving for them. Thus, no-frill airlines penetrated into business market and the thought that no-frills airlines are for leisure travel was broken and these airlines have began to compete also for business market.[57] (Table 2-3) For example, according to the latest survey of Barclaycard Business Travel, 70% of business travelers flew with LCC and %95 of them pleased with this service.[58]

Table 2-3 Business Market in UK (Civil Aviation Authority, CAP 754 UK Regional Air Services, www.caa.co.uk.,2005.)

Route	Airline	% passengers traveling on business	Total passengers (000)
Gatwick-Edinburgh	BA	44 %	388
	easyJet	39 %	371
Heathrow-Edinburgh	BA	54 %	943
	Bmi	48 %	687
Luton-Edinburgh	easyJet	45 %	485
Stansted-Edinburgh	easyJet/Go	38 %	477
London City-Edinburgh	Scot Airways	69 %	104
Gatwick-Belfast International	easyJet	20 %	210
Heathrow-Belfast International	Bmi	34 %	59
Luton-Belfast International	easyJet	33 %	398
Stansted-Belfast International	easyJet/Go	28 %	403
Gatwick-Belfast City	Flybe	35 %	225
Heathrow-Belfast City	Bmi	42 %	747
Gatwick-Newcastle	BA	52 %	261
Heathrow- Newcastle	BA	44 %	490
Stansted- Newcastle	easyJet/Go	30 %	304

[56] Ibid.
[57] Civil Aviation Authority. "CAP 754 UK Regional Air Services". [WWW, Internet], Address: www.caa.co.uk. [Last Accessed: 13.09.2007].
[58] Andreas Papatheodorou, Zheng Lei, "Leisure Travel in Europe and Airline Business Models: A Study of Regional Airports in Great Britain". Journal of Transport Management. Vol 12, 2006. p: 47-52

2.3.2.3 Commercialization

By competing for airlines and passengers, and also by the effects of privatization, regional airports take more commercial approach. In UK this alteration is explained with "virtuous circle".[59] According to this circle, the commercial tendency of regional airports, competitive pricing and enhanced facilities triggered air traffic, which affects the income from non-aeronautical actions and supply expansion. (Figure 2-9)

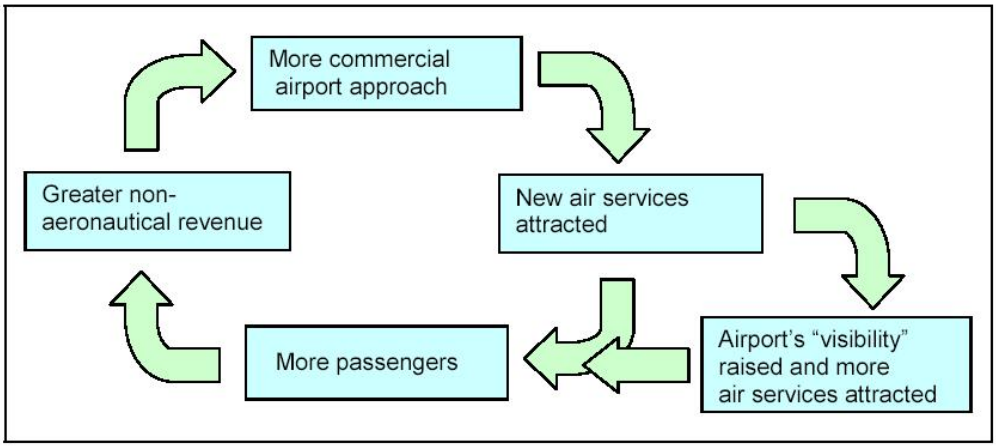

Figure 2-9 The virtuous circle (Source: Civil Aviation Authority, CAP 754 UK Regional Air Services, www.caa.co.uk.,2005.)

2.3.3 Regional Jets

With the introduction of regional jets, air transportation network has entered a new period. "This strategy of pursuing high-yield, hub-bypass inter-regional traffic is heavily dependent on the introduction of regional jets."[60] Being a technological advance, regional jets acquire the feasibility of some services especially on thinner regional routes. In the 1990s, airlines have begun to switch turboprops to small regional airports on the regional

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[59] Civil Aviation Authority. "CAP 754 UK Regional Air Services". [WWW, Internet], Address: www.caa.co.uk. [Last Accessed: 13.09.2007].
[60] Ian Savage and Burgess Scott, Deploying Regional Jets to Add New Spokes to a Hub. Journal of Air Transport Management. Vol 10, 2004. p. 147-150.

routes feeding their hubs.[61] Regional jets provided airlines to expand their services, improved the links between regions by giving greater choice, speed and comfort to the passengers. At first, regional jets were able to have 2.5 hour-flight with 50 seat capacity then by the developments on technology these capacities are increased. [62]

2.3.4 The Capacity Problems in Major Hubs

Due to rapid growth in air travel potential, airports have begun to expand their available capacity. The capacity of airports is linked with four factors: runway capacity, terminal capacity, surface transport capacity, passport, immigration and security capacity.[63]

Runway capacity that is the "controlling element of the airport system" is linked with air traffic control, environmental factors and the amount and plan of runways.[64] If these factors are appropriate, the growth of airport can be provided by increasing the number, length and orientation of runways together with taxiways. There is a tendency for larger aircrafts, which causes more number of people in the terminal. Especially, in the gathering spaces like stairs, lifts, escalators and corridors, this tendency leads congestion. An airport can upgrade existing building or construct new terminal buildings, which is dependent on airport's capacity on carrying new construction. Airports must have integrated surface transport system. Large aircrafts together with more number of passengers also cause the congestion on the surface transport system. Especially inadequacy in motorway around the airport provides severe limitation, when the growth of airport is mentioned. The areas of safety, security and government controls are of importance, because of the international terrorism and "growing movement of people as economic migrants or asylum seekers." [65] As a consequence, when runway and terminal capacities are exhausted, an airport has reached its limit and growth can only be provided with designing a new airport at some distance away.

All over the world, due to the fact that economic activities are associated with air

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[61] Civil Aviation Authority. "CAP 754 UK Regional Air Services". [WWW, Internet], Address: www.caa.co.uk. [Last Accessed: 13.09.2007].
[62] Ibid.
[63] Brian Edward, The Modern Airport Terminal. London, New York : Spon Press, 2005. p. 18.
[64] Ibid.
[65] Ibid. p.20.

transportation, there is a competition between airports among countries and cities.[66] For this reason, when the major airports have exceeded their available capacity, to expand air transportation network is inevitable. Generally it is impossible to construct a second major airport in the city, rather the regional airports feed the major one by constituting hub-and-spoke system.

2.3.5 Airport-Airline Relationship

The problem of shortage in capacity of airports is related with the geological division of air traffic. When we look at UK Regional airports' distribution, it seems that there is enough airport capacity. However, there is a problem about circulation of air traffic to the regions that will make it unattainable to reach the forecasted growth at air transport service. Namely, airport policy is related with airline behavior, in terms of "aircraft sizes, numbers and patterns of operation".[67]

The concentration on airports depends on the demand of passengers and also the behavior of airline. As any airport is chosen by airlines, the competitive advantage and traffic of that airport grows immediately. In other words, "airport population catchment size" designates which airports are chosen by airlines. For example, although, the distance between East Midlands and Birmingham airports is no more than 40 minute drive time, Birmingham dominates the other. In 1980, while East Midlands serviced for 1.2 million people per annum, Birmingham 1.6 million passengers per annum. By 2000, the former handled 7.6 million people and the latter 2.2 million. The larger market and the business decisions of airlines provided Birmingham being dominant, which increased air services of airlines and of course, the passenger throughput. Also, Birmingham has advantage of having shorter runway that serves for short haul services with narrow-bodied aircraft than East Midland. As a result, the larger market area, capacity constraints related with runway length or environmental limits cause one airport in region to overtake other ones.[68]

Thus, the airline-airport relationship has obtained a new level that regional airports are chosen for low charges, as well for regional economic development. Airports, affecting

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[66]Thomas Feldhoff, "Japan's Regional Airports: Conflicting National, Regional and Local Interests." Journal of Transport Geography. Vol 10, 2002. pp:165-175.
[67] Ian Humphreys and Graham Francis, "Policy Issues and Planning of UK Regional Airports". Journal of Transport Geography. Vol 10, 2002. pp: 249-258.
[68] Ibid.

the opportunities for employment, local economy and incomes of regions are like origins rather than destination gateways.

2.4 OVERVIEW OF THE REGIONAL AIR TRANSPORTATION IN THE WORLD

2.4.1 The Recent Picture of United Kingdom (UK)

> Each airport can not be viewed in isolation from other airports. Airports both compete with each other and complement each other to some extent.[69]

To provide integrated and sustainable transport system, United Kingdom Government (DETR, 1998) published "White Paper" about "A New Deal for Transport" in 1998. With regards to air transport, the strategy of "New Deal" consists of framing a long term policy, necessities of sustainable development, the contribution to regional economies and combination with other surface transportation types. Namely, it was about the role of regional airports to promote an integrated, coherent and sustainable transport network.[70] Thus, the regional air transportation has increased by 150% since the "White Paper" providing liberalization, privatization and commercialization of airports, as indicated in Figures 2-10 and 2-11.[71]

Deregulation in UK provided low-cost/no-frills carriers to enter the market such as Ryanair, and easyJet. These carriers have captured traffic from other types of transport and also expanded the hinterland of airports by providing passengers to travel long-way for cheaper flights. Besides, with the effects of deregulation, greater liberalization was achieved by providing open access to all UK's mutual associates on international paths to regional airports and offering the same route for UK airlines (Figure 2-12) The management of seven airports of Heathrow, Gatwick, Stansted, Glasgow and Edinburgh was shifted to BAA and some regional airports have been completely or partially privatized

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[69] Brian Graham and Clair Guyer, "The Role of Regional Airport and Air Service in the UK." Journal of Transport Geography. Vol 8, 2000. pp: 249-262.

[70] Ibid.

[71] Civil Aviation Authority. "CAP 754 UK Regional Air Services". [WWW, Internet], Address: www.caa.co.uk. [Last Accessed: 13.09.2007].

by firms some of which are the owner of other transport systems.[72]

In UK, the concept of regional airport is used for the airports which serve mainly for their regions and don't have international figure of London Heathrow and Gatwick. For example, Stansted, Luton and City airports operate generally for local requirements. While, these airports facilitate to economic development, they also lighten the congestion of major airports, relieve the long–way journeys to assess and feed the local identity and image. When it is thought that there is shortage of capacity in the hub airports of South-East England, the contribution of regional airports to the air transport system can not be denied. [73]

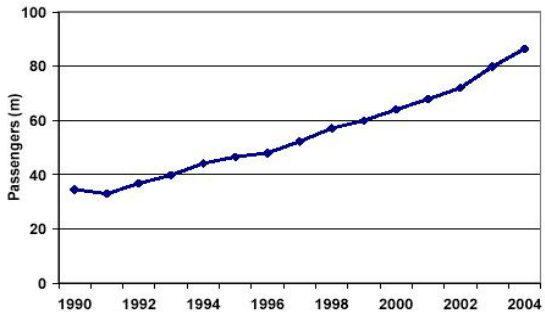

Figure 2-10 Total passengers at UK regional airports (All UK regional airports 1990-2004)

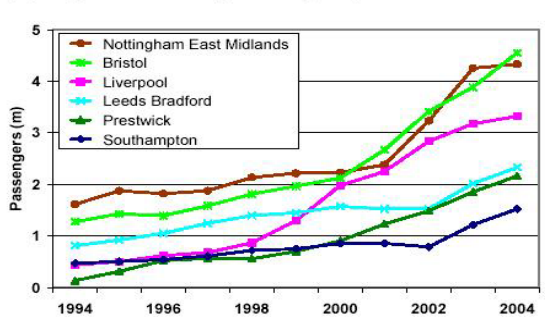

Figure 2-11 Total passengers at UK regional airports (Top six fastest growing airports 1994-2004) (Source:, www.caa.co.uk.)

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[72] Brian Graham and Clair Guyer, "The Role of Regional Airport and Air Service in the UK." Journal of Transport Geography.Vol 8, 2000. pp: 249-262.
[73] Ibid.

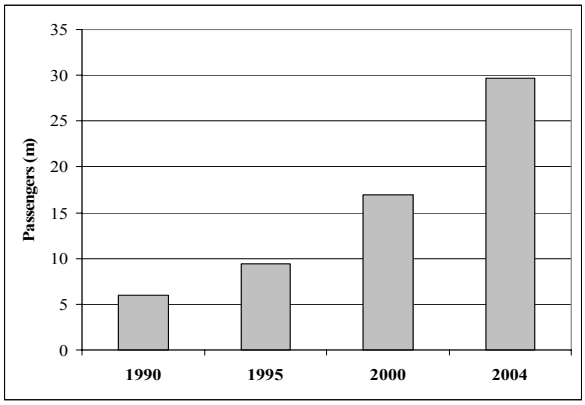

Figure 2-12 The growth of international air services in UK (Source: Civil Aviation Authority, CAP 754 UK Regional Air Services, www.caa.co.uk.,2005.)

Regional airports are generally located in pairs like by the distance of no more than 70 km, as in the case of Manchester/Liverpool. Although, passengers access to these city-pair airports in a 90-minute-time by driving from home, one of the pairs is dominant. According to the observations of DETR, UK Regional airports will be used by approximately 80 million extra people per annum by the year 2015 and also freight market will develop at a parallel ratio. With the help of local transport plans which search for connecting high speed types of transportation to airports, the passengers must be inclined to use public transport by accessing to airports. For example, being as a regional intermodel hub, travelers and also the non-airport users can transfer proficiently between all types of transport in Manchester. However, at smaller UK regional airports integration with other transportation modes is still being the most important problem.[74]

According to "White Paper", there are different modes of regional airports in the country that carry out different functions. While, some of them serve point to point, the others integrate passenger traffic. Regional airports have grown rapidly in comparison with the major airports that have rather more modest percentage of development. Whereas in 1988-1998, Stansted, Belfast City and Bristol have the highest ratio of development, respectively. In 1993-1998 period, since Belfast City had achieved a period of stability, Prestwick substituted it by providing enormously high proportion development with the

[74] Ibid.

help of low-cost carriers. Between 1997 and 1998 the highest increments were at Luton, Liverpool, Stansted and Southampton.[75]

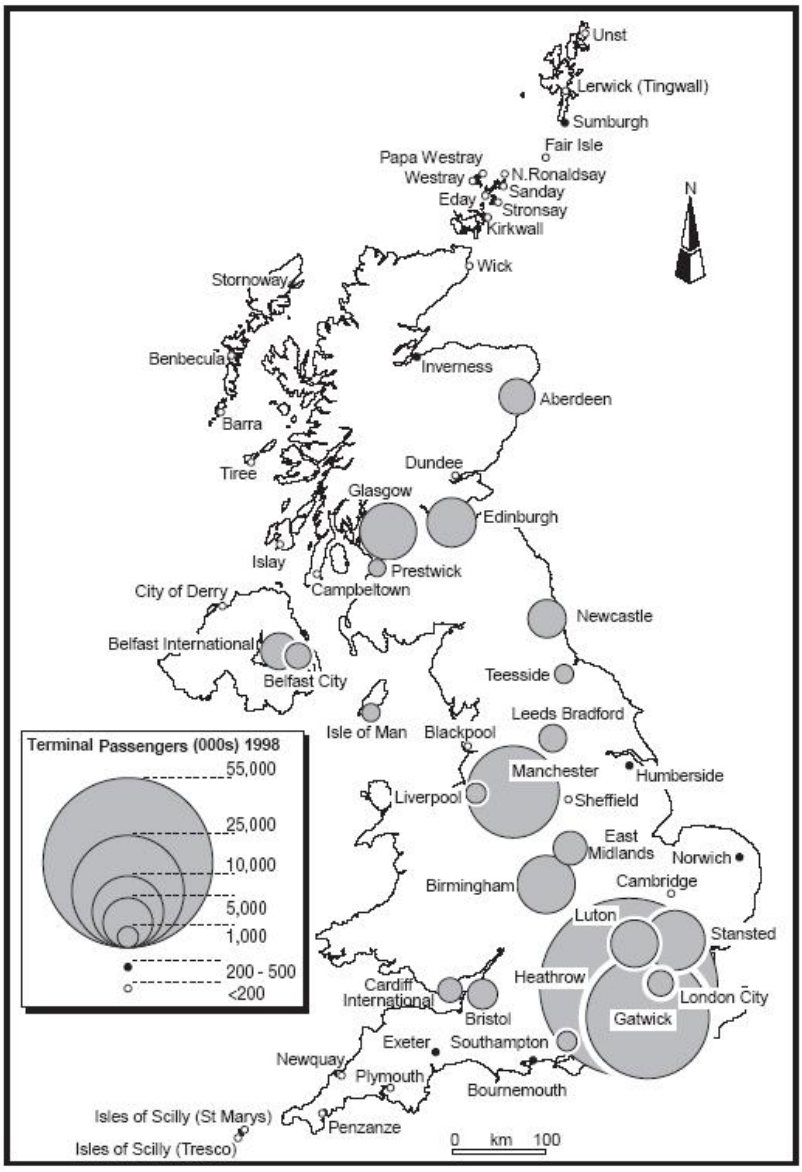

Figure 2-13 Airport System in UK.(Source: Brian Graham and Clair Guyer, "The Role of Regional Airport and Air Service in the UK." Journal of Transport Geography.Vol 8, 2000.)

[75] Ibid.

Demand for air transport is affected not only by macro-economic processes, prices and airport and airline characteristics, but also by the geographical and locational features of airport hinterland.[76] Due to the fact that London is the main business and financial center of the UK and also one of the world's main financial centers, London Airports are of importance.[77] Although there are 56 UK airports, 64.1% of passengers are handled by London Area Airports that contains Heathrow, Gatwick, Stansted, Luton and London City airports. 56.3% of all passengers are serviced by Heathrow Airport that is really full and Gatwick Airport being the busiest single runway airport in Europe. Now, while, the fifth terminal is under construction in Heathrow, Gatwick Airport has restricted capacity for growth. Luton Airport that increased passengers the ratio of 27.8% in 1998 and Stansted Airports of which British Airway Administration (BAA) expand the capacity of 15 m passengers per annum, have growth fast in 1988-1998. This provided the decline in the ratio of passengers by handled Heathrow and Gatwick, by encouraging those regional airports. It demonstrates the dominance role of South-east in the UK economy and demography. [78](Figure 2-14)

There are four modes of traffic of UK regional airport: scheduled domestic passenger, scheduled international passenger, passenger charter and freight and general aviation. Initially, the UK scheduled domestic passenger service at regional airports that forming airport-pairs can be generalized into four categories: Servicing to London Heathrow that is national hub, to other London Area Airports, to Luton and Stansted by providing low-cost flights and to other regions. According to Figure 2-14, services from regional airports to Heathrow airport showed modest increase in 1993-1998 in comparison with the other London Area airports, because of the insufficient capacity of Heathrow and its role of connecting regional airports to international destinations. The low-cost carriers provided much larger increases on services from regional airports to other London Area airports, especially to London and Stansted by using business traffic successfully, due to the fact that small and medium airlines are more interested in low-cost air services than larger

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[76] Ibid.
[77] Civil Aviation Authority. "CAP 754 UK Regional Air Services". [WWW, Internet], Address: www.caa.co.uk. [Last Accessed: 13.09.2007].
[78] Brian Graham and Clair Guyer, "The Role of Regional Airport and Air Service in the UK." Journal of Transport Geography.Vol 8, 2000. pp: 249-262.

airline companies. As for the inter-regional operations, they are the repercussion of the insufficiencies of UK's cross-country rail and motorway transport services. It can be said that inter-regional services are the most significant part of regional airport system; it demonstrated a high increase between in between 1993 and 1998. Also, the development of this service system will be increased by more using of regional jets.[79]

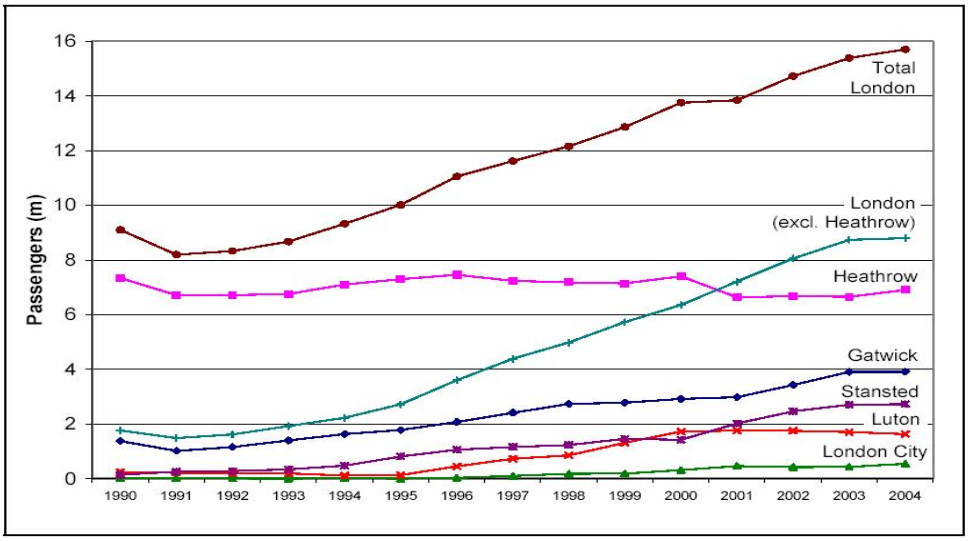

Figure 2-14 The growth of traffic in London (Source: Civil Aviation Authority, CAP 754 UK Regional Air Services, www.caa.co.uk.,2005.)

With regards to scheduled international passenger services, regional airports are more limited for this market. Approximately all the major UK regional airports have operations to other European Union intercontinental hubs which is generated by the liberalization of air transport system in the EU. As far as passenger charter traffic is concerned, regional airports carry out non-scheduled passenger services, as well. While passengers are more directed to travel with scheduled services of airports in their own regions, charter passengers are inclined to use surface types of transport to approach cheaper journeys and different and more alternatives of destinations than those provided by most regional airports. Although, IT business has provided positive impact on charter

[79] Ibid.

traffic, the growing business for low-cost carriers has weakened the charter carriers. As to freight and general aviation, since freight market rely on night flights, the operations tend to towards environmental protests. Hence, the freight market is being serviced by only 10 airports excluding Heathrow and Gatwick, and also has maturity growth. Stansted airport has considerable growth rather than the others. General aviation consists of administrative business jets, which provides regional airports compulsory available and which has impact on inward investment when deciding the location of airports.[80]

2.4.2 The Recent Picture of the United States (US)

Air transport provides more things than being a carrier service, by affecting economic system of life, changing social and cultural perspectives and shaping political history. The Airline Deregulation Legislation (Public Law 95-504) in 1978 abolished the legal control for the economic instruction of the airline market proposing the raise of competition in this market. This act has an influence on reducing fares, organizing the route systems of the airlines, development of commuter carriers and growth of "low-cost airlines" that provide basic service with few of amenities. As for the route system, there has been structural alteration in route system of large carriers. The hub-and-spoke system structure substituted the typical airline linear route system, which is indicated in Figure 2-15. By the help of this shift, while less service has been obtained among small societies, more service has been provided among large communities and small ones. This shift has also increased the frequency of air service. At this point, the impacts of regional jets can not be denied.[81]

By the deployment of regional jet aircrafts having the capacity of 30-100 passengers, US domestic air transport system has been developed. In the beginning, it was thought that these new regional jets would overfly crowded hubs and acquire point-to-point service in minor markets. But then, it was observed that they added new routes to lighten the burden of congested major airports and to service from major airports to cities which were not serviced until that time. At this point, which new spokes will be added to hubs is of importance. As for Ivan Savage and Burgess Scott, route length, the population of the

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[80] Civil Aviation Authority. "CAP 754 UK Regional Air Services". [WWW, Internet], Address: www.caa.co.uk. [Last Accessed: 13.09.2007].
[81] Robert Havonjeff and Francis X. Mc Kelvey, Planning and Design of Airports. 4th edition, San Francisco, California, USA: Mc Graw-Hill, 1994. pp: 9-10.

spoke city and the amount of passengers and flights designates the new regional airports' locations, namely, spokes. After the deregulation, Delta Airlines has used Cincinnati/Northern Kentucky Airport as a hub and expanded it rapidly by adding new spokes. In 1000 air miles of Cincinnati, 198 US commercial airports exist. According to analysis of government in August 1996, while 57 of them had nonstop service, in August 2001 the new 36 of them which were not serviced in 1996 have been serviced.[82]

2.4.3 Current Patterns and Trends in Japanese Air Transport

In Japan, since 1950's, expansion of air transportation network all over the country, has been of importance for modernization process. Especially, with the effects of constant growth in economy of Japan and the globalization process, the demand for air transportation has increased since 1980's. However, there is a "unipolar concentration" in Japan. The economic power is divided into three metropolitan regions of Tokyo, Osaka and Nagoya, which caused two main agents. First, there is an inequality between regions. Second, these metropolises, particularly Tokyo, are loosing their positions in the international competition because of exhaustion of airports' capacity. This provides important business and financial companies to move their headquarters to other Asian metropolises. While Tokyo must have "efficient, high capacity, globally oriented air transport infrastructure", today the reverse of that appears to be true. Parallel to Japan's trade and industry development, it relies on aviation to exchange people and goods faster. As a result, to be one of the most important growth industries in Japan, air transport needs extra investment to spread it all over the country.[83]

In spite of consisting of many islands, Japan has very well connected domestic system in which islands have their own regional airports. According to the research in 1998, 267 city pairs had reciprocal scheduled flights using with 93 airports. In addition, 21 of them were approved for scheduled international flights to assist the major airports in metropolitan cities that are having problem such as insufficient capacity. However, although Japan has expanded transport system, the economic and centralized structure of

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[82] Ian Savage and Burgess Scott, "Deploying Regional Jets to Add New Spokes to a Hub". Journal of Air Transport Management. Vol 10, 2004. pp: 147-150.

[83] Thomas Feldhoff, "Japan's Regional Airports: Conflicting National, Regional and Local Interests." Journal of Transport Geography. Vol 10, 2002. pp:165-175.

Japan's policy affords regional instability in the spatial division of airport locations. As for Feldhoof, the hierarchization of airport system is the mirror of Japan's policy.[84]

Airports in Japan that supply economic and social developments play a major role in performing a crucial "public function". Keeping in mind that function, national regional planning policies have mainly concerned with expansion of air transport. The development and extension of air transport system are dependent on efficient and sensible planning of airport infrastructure and financial supporting. The concept of regional airport is used for the airports except the three metropolitan regions in Japan. The investments are required for more proficient regional airports to connect domestic destinations in an optimum manner. As illustrated in Figure 2-16, the annual investments in airport structure and firm government controls together with the regulations in air transport, has extended significantly.

Now, Japan's aims and policies about the regional airport development are "the infrastructural modernization, the internationalization and the development of airport hinterland." Initially, to respond the requirements of the modern aircrafts like having wide-body Boeing 747-400, airport structure must be expanded. Especially, it is of importance for the regional airports from which daily flights are carried out directly to the metropolitan cities. For example, the regional airports in Naha, Hiroshima, Oita and Shin-Chitose. Secondly, as for internalization, to respond to the presented deficiency of capacity of metropolitan airports, the government policy is to expand the major airports and get "internalization regional airports". Thus, when the major airports can not expand their capacity, this aim appears to be "therapy of the ailing airport system". Especially, regional airports provide new slots for new or foreign airlines desiring to come into the Japanese market. As for the last one, the collaboration of municipality, airport managers and government work together and try to constitute "airport oriented regional development plans", in order to regenerate the local economy. Since, airport infrastructure affects the regional economy via providing accessibility. Namely, proficient regional airports offer increase on international events, high-tech business and research and development organizations. Besides, the increase of regional tourism affects the number of passengers in regional airports. Consequently, regional airport system has been expanded all over the

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[84] Thomas Feldhoff, "Japan's Regional Airports: Conflicting National, Regional and Local Interests." Journal of Transport Geography. Vol 10, 2002. pp:165-175.

country, together with some problems.[85]

As a result, economic activities related to air transport and demand for "globalized air transport", has increased the number and quality of the airport locations and constitute hub-and-spoke system of air transportation in Japan.[86] However, all of these issues, not having apparent policy for air transport, the influence of bureaucracy, politics and big business and financial restrictions, are required to revitalize for future of aviation in Japan, being one of the most important air transportation market in the world.

To sum up, globalization, deregulation and the advances of technology affect the growth of regional air services, which has led new approaches on regional airport design. Airports have began to be expanded with new programs so that they include conference halls, communication hubs, retail points and to provide the most cost efficient, the fastest and gradually the safest form of long-distance travel, and also, thousands of jobs by supporting much wider social and economical areas.[87]

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[85] Thomas Feldhoff, "Japan's Regional Airports:Conflicting National, Regional and Local Interests." Journal of Transport Geography. Vol 10, 2002. pp:165-175.
[86] Ibid.
[87] Brian Edward. The Modern Airport Terminal. London, New York : Spon Press, 2005. pp:132,137.

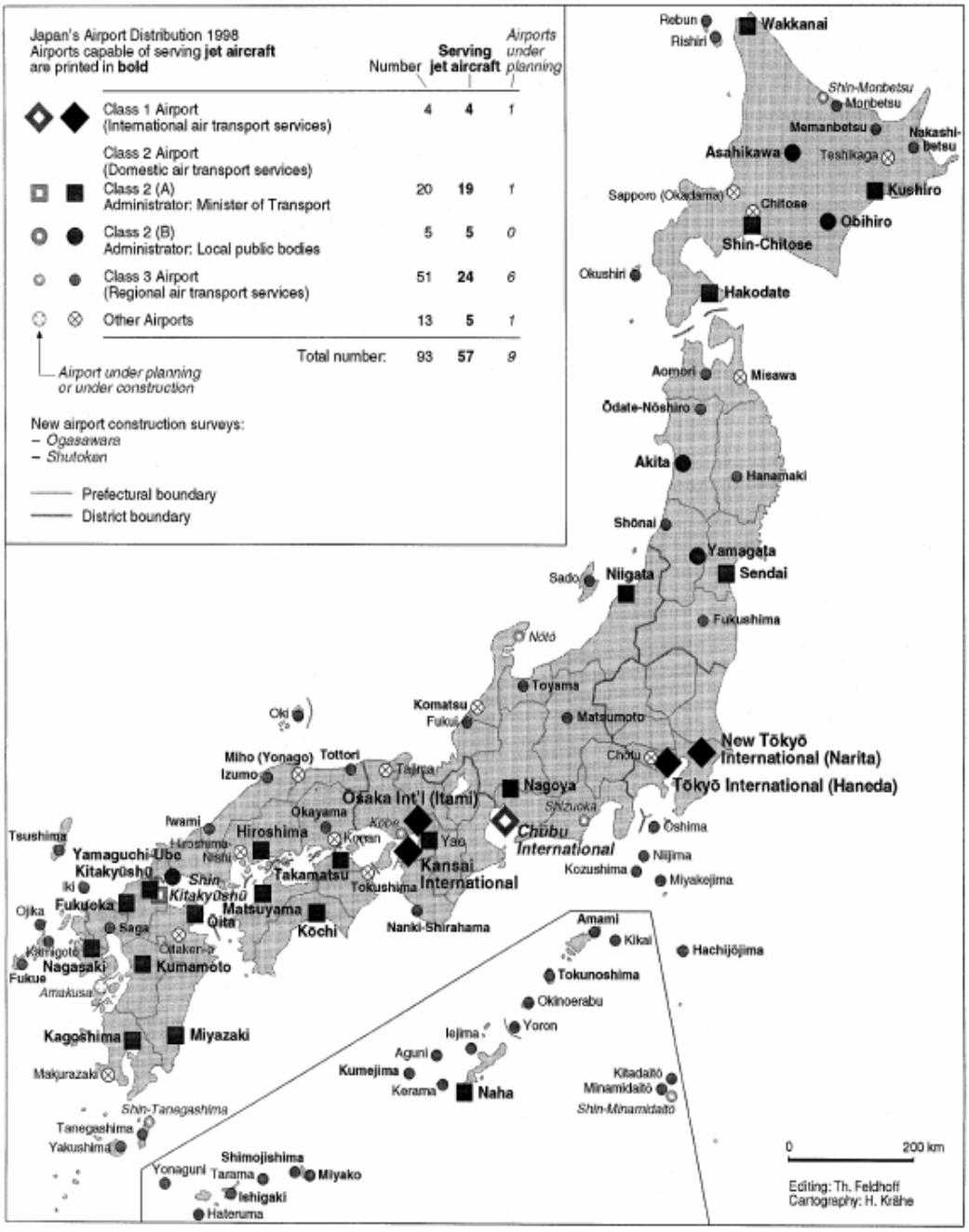

Figure 2-15 Airport System in Japan (Source: Thomas Feldhoff, "Japan's Regional Airports:Conflicting National, Regional and Local Interests." Journal of Transport Geography. Vol 10, 2002. pp:165-175.)

2.5 REGIONAL AIRPORTS

2.5.1 Examples of Regional Airports in the World

2.5.1.1 Southampton Airport, UK

Being a small regional airport, Southampton designed in 1990, by Manser Associates. Although its construction cost is half of any previous passenger terminal that pulled down by BAA, it has elegant form of the structure with its swooping silhouette and smooth aluminum cladding. In the plan and the section, the main architectural elements are articulated with each other, in order to constitute the compact form of it. The form of roof and elevated walls of offices direct passengers. The simplicity of the layout is followed by the interior spaces which has a bird-like form. Inside, the arrivals and departures concourses are set as aisles on either side of the ground level, providing daylight from the two wide band rooflights. The central offices are between the concourses. While at the landside, there are ticket checks, passport control, a few cafes, shops and bars, there are duty-free shops and bars with apron at the airside. Being able to cheap and elegant, Southampton Airport becomes a model for other regions (Figures 2-16 - 2-18).[88]

Figure 2-16 Southampton Airport,UK

Figure 2-17 Southampton Airport,UK

[88] Brian Edward. The Modern Airport Terminal. London, New York : Spon Press, 2005. pp:231-233.

Figure 2-18 Interior view from Southampton Airport,UK

2.5.1.2 Brisbane Airport, Australia

Having a slender curved terminal and three satellites, Brisbane Airport is designed by Bligh Voller Architect. The terminal has a wonderful clarity of organization with a lightweight steel frame. The basic form of the terminal, which consists of two storeys with departures on upper level and arrivals below, provides orientation and also it is suitable for future expansions. The terminal has a central vaulted rooflit spine that filled with interior planting which creates "a moment of tranquility" for the passengers [89] (Figures 2-19, 2-20).

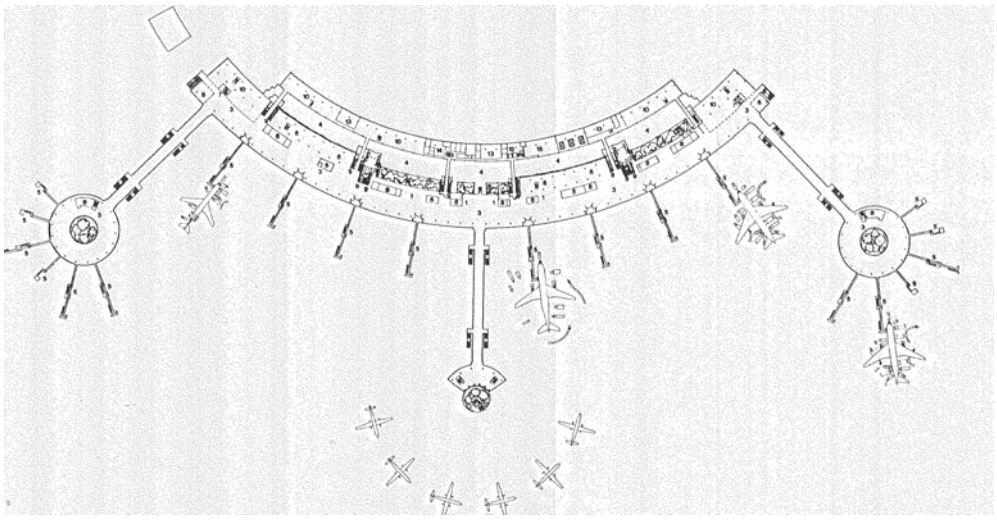

Figure 2-19 The Plan of Brisbane Airport, Australia

[89] Brian Edward. The Modern Airport Terminal. London, New York : Spon Press, 2005. pp:234-235.

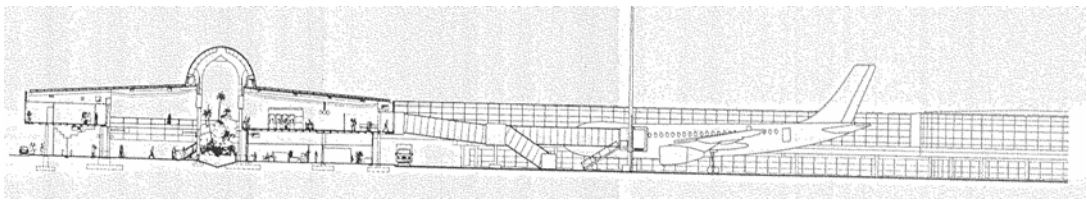

Figure 2-20 The Section of Brisbane Airport, Australia

2.5.1.3 Gaudeloupe Airport

Designed by Paul Andreu, the new terminal at Guadeloupe Airport has large volumes for departures on the upper floor and arrivals below. The two large volumes together with the daylight entering into the terminal via a perforated façade of glass and metal panels create the orientation. Also, there is a bridge between the volumes, which contains the control facilities and spaces for airport staff. Passing the bridge of controls is like moving towards the space in which the journey will begin.[90] (Figures 2-21 and 2-22)

Figure 2-21 Gaudeloupe Airport

Figure 2-22 View from Gaudeloupe Airport

[90] Brian Edward. The Modern Airport Terminal. London, New York : Spon Press, 2005. pp:235-236.

2.5.2 The Features of Regional Airports

If an airport is more enormous and busier, it is more dependent on power consumption for computer systems, baggage handling carousels and also machines in cafes. These experiences make people more insensitive. In current years, deregulation and privatization of commercial aviation affected airports to reduce their charges. So, airports are forced to reduce the energy consumption of their buildings, aircraft manufactures and also the fuel consumption of their planes. As a result, this fed to design new generations of airports and planes for lesser operating costs. In this manner, regional airports get significance again, from a different aspect. [91]

Regional airports are economical in comparison with big-budget, heavy construction major airports. However, there is not any basic architectural standard of regional airports. There is a widespread opinion about regional airports that in the low-cost area, any shed can be done for an airport. But, passengers pay for a no-frills flight, not for a no-frills airport. Manser Associates showed that a regional airport can create the architectural of quality with its low-cost Southamptan regional airport in England in 1993.[92] Although Southamptan airport was half price of any previous airport by the British Airports Authority, it has curving roof that allows diffusing of daylight inside, glazed perimeter to improve the quality of daylight, gently curving side wings and lightweight structure. Hugh Perman defines it as a textbook exercise to make architecture out of irregularly modified standard mechanism.[93] Passengers take a train from London in order to benefit from its cheaper fares and faster processing of its clarity of circulation.

The typology of regional airports consists of a long, shallow, sometimes slender curved terminal building between the road on landside and airside.[94] On the landside, there is a terminal building, the porch for caring system and car parks. On the airside, there is an apron, taxiways, runways and visual helpers. However, the typology is relatively straightforward and "architectural language derive from articulating the interior routes and bringing daylight into the center of the terminal". [95] Regional airports are generally

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[91] Hugh Pearman. Airports: A Century of Architecture. London: Laurence King Publishing Ltd, 2004. p.165.
[92] Ibid. p.168.
[93] Ibid..
[94] Brian Edward. The Modern Airport Terminal. London, New York : Spon Press, 2005. p.231.
[95] Ibid. p.235.

constituted by a single-level-directed or a two-storey terminal in which departures on upper level and arrivals on below. In addition, this form can be adapted with respect to local variations and expanded when demands increase. To be the main building of air transport system, the airport terminal shows the glamour, scale and technological power of the era. They are symbolic buildings reflecting values of the society, namely national image. That's to say that while regional airports are designed according to international standards and regulations, they are also tempered by regional characteristics. To illustrate, in Europe leisure activities and retailing market forms the architecture of terminals, while in the USA a linear functional system creates the terminal. In Europe, terminals look like shopping mall. As for the USA, they are enclosed areas having barely shops, bars and duty-free facilities. Generally, passengers hurry for the plane in terminal and also because of the direct gate ticketing service, there is not passport or customs check which provides travelers to waste time.[96]

By the help of new technology, the flexibility, security and effectiveness of airports are enhanced. According to Hugh Perman, airports symbolize progress, freedom and trade.[97] At the beginning of 21st century airports evolved from whole self-sufficient and flexible small regional airports into enormous structures which look like cities. Victorious airports like cities can not be in an unchanging form; rather they must in a steady change to adapt varying circumstances. As a result, in airport architecture, complete flexibility of planning must be provided for increased demand and possible expansion in the future. [98]

Another feature of regional airports is the ability of expansion, when there is a growth in capacity, satellite terminals must be arranged at right angles in front of the main building or extra modules must be added simply at both sides according to requirement of the airport. As a result, there must be a planned expansion program.

As Brian Edwards mentioned, regional airports have the chance of obtaining clarity of circulation which is rejected by major airports.[99] While Saarinen was designing Dulles Airport, he analyzed the circulation patterns of existing airports and then scaled them up to the size of terminal he was planning. According to him, circulation is related with "a

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[96] Brian Edward. The Modern Airport Terminal. London, New York : Spon Press, 2005. p:139-142.
[97] Hugh Pearman. Airports: A Century of Architecture. London: Laurence King Publishing Ltd, 2004. p.9.
[98] Ibid. p.107.
[99] Brian Edward. The Modern Airport Terminal. London, New York : Spon Press, 2005. p: 231-236.

diagram of what happens at an airport?"

The relationships of major elements of architecture of regional airports create the sense of place, direction and calm with volume, spatial sequences and light in the terminal. Kohn Pederson Fox, the architects of Greater Buffola Airport, explains as "this relationship can be thought of as heavy versus light, static versus dynamic or solid versus void. Our design attempts to give physical representation to these basic dualities." In this manner passengers are susceptible to the transition from point to point.[100] Routes, movements and circulation must be considered, since passengers move among terminals, among modes of transport and between building types. For example, at Brisbane regional airport, designed by Bligh Voller architect in Australia, the terminal divides the public concourse from the departure lounge with its central vaulted rooflit spine that is lofty, filled with interior planting. This inside garden also provide traveler to calm for a moment. In addition, its shallow curve ensures passengers to orient for entering from both landside and airside. At the terminal of Guadeloupe Airport, designed by Paul Andreu, travelers find their way through the two large volumes by the use of daylight entering the terminal passing through a perforated façade of glass and metal panels. Between two large passenger volumes, there is a bridge consists of main control functions in the terminal. Passing through the bridge of controls provides the sense of moving into a different kind of atmosphere where the flight really begins. Regional airports can be read from landside to airside and this legibility increase its attractive value. Even, like the better railway stations, people can visit airports for a drink or a meal or for shopping.[101]

According to Hugh Perman, the difference between the regional airports and the major ones is the same as that of between a high street shop and out-of-town super-mall. Regional airports have more compact form and less engineering system in comparison with the major ones.[102] While major airports have the scale of mini city, regional airports have to mediate between the human scale and that of aircraft in the limited dimensions of rather smaller terminal. Like major airports, the regional airport is a new center of exchange of people, companies and nations in a culturally, economically and socially manner. That is to

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[100] Hugh Pearman. Airports: A Century of Architecture. London: Laurence King Publishing Ltd, 2004. p. 126.
[101] Brian Edward. The Modern Airport Terminal. London, New York : Spon Press, 2005. p: 231-236.
[102] Hugh Pearman. Airports: A Century of Architecture. London: Laurence King Publishing Ltd, 2004. p.184.

say that the terminal building is a huge modern meeting hall. J. G. Ballard, a science fiction writer, names terminal concourses "the rambles and agoras of the future where everybody briefly becomes a true world-citizen." Nowadays, the airport terminal is a big shopping mall where airline passengers move with difficulty.[103] Even, some citesone executive could be defined his airport as a runway with a shopping mall besides. In addition, rental from restaurants, bars, hotels and car-parking have generally been far more profitable than airside revenues, which transforms the concept of airports into the commercial one.[104] However, to be places for social exchange, terminals require areas for free of retail like places for reading, reflection and for gazing upon the wider environment. Like parks in a city, calm spaces are designed with trees, shrubs and may be fountains to get better air quality and camouflage surroundings noise. [105]

It seems that the main function of airports is to get people from land to air. Morover, they are hybrid spaces having the potential to be the most exciting places on earth by consisting of transport interchange, factory, distribution centre, shopping mall. Formerly, the achievement of airports was calculated by their good organization and ability to ensure the arrival and departure of planes on time for the minimum of the passenger effort. However, nowadays, the success of airports is more than that. Airports must offer social connection while providing physical travel, as well. As Brian Edward mentioned, there is a change in importance of airports from mechanistic purpose to cultural meaning.[106] Because, passengers waste a lot of time in airports or only pass through them while going to somewhere. At this point, architectures of airports can achieve many things such as "to calm the nerves and lift the spirits." An airport has passengers full of with confidence, delight and "pleasurable anticipation." As Frank Gehry admitted that he would like to attempt one building type on his own: an airport. Since the dynamism and complexity of airports charms him and he thinks that it is very hard to find magnificence in it.[107]

There is a reciprocal relationship between regional airports and aircrafts, like in major airports. That's to say, there is a link between the technology of the aeroplane and

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[103] Brian Edward. The Modern Airport Terminal. London, New York : Spon Press, 2005. p: xii-xv.
[104] Brian Graham and Clair Guyer. "The Role of Regional Airport and Air Service in the UK." Journal of Transport Geography. Vol 8, 2000. pp: 249-262.
[105] Brian Edward. The Modern Airport Terminal. London, New York : Spon Press, 2005. p. 135.
[106] Ibid. p. xvi.
[107] Hugh Pearman. Airports: A Century of Architecture. London: Laurence King Publishing Ltd, 2004. p.183.

that of the terminal. Airport design influences plane design as much as the size and strength of the landing field which is the key consideration. Airports are planned according to dimension and capacity of airports. The design of runways, taxiways and aprons, terminals and check-in desks, security portals, custom halls and the capacity of the baggage reclaim carousels are affected by the number of passenger per plane. In addition, the key metaphor of airport buildings is affected from this relationship since 1930s. In the air, the plan of airports is generally seen as the forms of aeroplane or the imagery of flight. The generation of airports is the feature of modern world. The modern world's airports respond aesthetically to the design of planes themselves, because the generation of wonderful planes is the feature of the modernism.[108]

The concept of regional airport also necessitates an integrated airport system. While airports race with each other, they also complement each other.[109] Consequently, regional air transport policy must be integrated into national aviation policy. In addition, airports have been not inaccessible facilities at the edge of the cities, but rather they are part of "inter-connected web of transport infrastructure" since the past decade.[110] Namely, the integration of air transport and surface modes is necessary in order to get better public transport access to airports. As a result, surface access policy must be integrated into local transport plans. Airports have to be connected to bus and rail services to be successful in long term period.

2.5.3 Effects of regional airports on their regions

As Hugh Perman said that air transportation contribute to regional growth. "An airport on whatever scale, is a prime economic generator."[111] Due to the fact that, airports influence much larger area than the area of the airport itself, regional airports assist to their regions' economies while they feed the major airports.[112]

In accordance with the work of Oxford Economic Forecasting (OEF, 1999) and

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[108] Brian Edward. The Modern Airport Terminal. London, New York : Spon Press, 2005. p: 35-37.
[109] Brian Graham and Clair Guyer. "The Role of Regional Airport and Air Service in the UK." Journal of Transport Geography. Vol 8, 2000. pp: 249-262.
[110] Brian Edward. The Modern Airport Terminal. London, New York : Spon Press, 2005. p. xiv.
[111] Hugh Pearman.Airports: A Century of Architecture. London: Laurence King Publishing Ltd, 2004. p.167.
[112] Brian Graham and Clair Guyer. "The Role of Regional Airport and Air Service in the UK." Journal of Transport Geography. Vol 8, 2000. pp: 249-262.

DETR, air transportation is a main sector in UK that crucially has impact on the other already grown sectors such as "the knowledge-driven economy", "banking/financial services" and "efficient transport linkages" that are of importance for companies' investment decision-making in the globalized world. Besides, air transport provides some half million jobs in the UK. " assuming a 4% annual growth in passenger traffic to 2015, a reduction of 25 million passengers per year would mean that by then GDP would be around nearly 4 billion pound a year lower (by 1998 prices)" as a consequence, regional airports affect regional economies with three means. Firstly, they function for employers and "one employee per 1000 passenger throughput is the normal ratio". Secondly, they are catalyzers of the other on-site economic activities and lastly, airports operate such as "a regional economic multiplier."

While regional airports spread the benefits of major airports to the whole region, they also have impact on regional economies and tourism like the other major airports, by producing accessibility. They enliven the local economy by providing working areas for employee and acting as a catalyst for other on-site economic activities. Thus, they balance geographical differences.[113] For instance, many industries like the drug industry, horti-culture, spare parts manufactures and the textile industry rely on air transportation for their shipping perishable and high value cargo. For investors, the proximity and accessibility of an airport are important factors when choosing the locations they will invest.[114] Finally, "airports function as a regional economic multiplier". Hence, the economic development plans of regional airport sites have importance and should be integrated into overall regional planning strategies.[115] Hence, the regional planning should be airport oriented. Because of the problem of transporting people to and from airports, airports need to be integrated with sustainable transportation system. How and where the regional airport located is related with regional planning strategies. The regional airports' locations differ from each other because of different natural geographical, economical and settlement features of the regions.[116] So, they are the signs of the regions like a mirror.

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[113] Ian Humphreys and Graham Francis. "Policy issues and planning of UK Regional Airports." Journal of Transport Geography. Vol 10, 2002. pp: 249-258.
[114] John E. Peterson. Airports for Jets, Chicago: Blakey-Oswald Printing Company, 1959.
[115] Brian Graham and Clair Guyer. "The Role of Regional Airport and Air Service in the UK." Journal of Transport Geography. Vol 8, 2000. pp: 249-262.
[116] Julie Cidell. "Regional Cooperation and the Regionalization of Air Travel in Central New England." Journal of Transport Geography.Vol14, 2006. pp: 23-34.

To sum up, because of the airports' effects on location and economic factors, they can not be only seen as air transportation system's ground stations. Airports are main point of transport and regional planning strategies. So, the air transport policy must be integrated with regional planning systems in the framework of a national policy.

Tourism and air travel is related with each other. Especially, in terms of leisure, business and other functions like visiting friends and relatives (VFR), health treatment and pilgrimage. "Demand for air transport services is essentially derived from tourism activities." Accessibility is of importance in economic and tourism development. Even, the percentage of tourism is 90% of entire air transport industry.

CHAPTER 3

REGIONAL AIR TRANSPORTATION SYSTEM IN TURKEY

3.1 GENERAL VIEW

With the effects of globalization, liberalization, technological advances in information and communication skills and alteration of traditional methods of trade, the time and the speed get importance, which let societies to enter the period of competition and has influenced the lives of them. Changing of life styles especially affected the requirements of developing countries one of which is the increase of the concern and demand of air transportation, like in Turkey.

As demonstrated in Figure 3-1, the demand of air travel considerably increased and will continue to increase steadily in the foreseeable future in Turkey, which brings out the revitalization of air transportation system and the changing the policy, inevitably. In this sense, in order to provide integrated and sustainable transport system all over the country, the structure of air transport system should be transformed from linear route system confined to metropolitan cities into radial one constituted major and regional airports defined as hubs-and-spokes.[117] At this system, all passengers fly to a main point and then they are distributed via smaller aircraft to a number of smaller regional airports or smaller aircrafts fly between the regions, named cross flight. Additionally, the policy of aviation has become a well designed, sustainable air transport network, in which regional airports integrated with other surface transportation types feed the major ones, which contributes to

[117] Dr. Richard de Neufville, Effects of Deregulation on Airports. Airport Systems Planning and Design/RdN. [WWW, Internet], Address: ardent.mit.edu/airports/ASP-current-lectures/Deregulation 02.pdf-. [Last Accessed: 12.12.2007].

the social and economic lives of regions.

Figure 3-1 Air Traffic Growth in Turkey (Source: DHMİ 2005 Annual Report, www. dhmi.gov.tr.)

At this chapter, the recent picture of air transportation system will be drawn by the help of factual and statistical data collected by the DHMİ, SHGM, DLHİ and meetings and interviews with government, airline companies, and the problems will be explained and then the possible solutions have been suggested.

3.2 THE STRUCTURE OF REGIONAL AIR TRANSPORTATION SYSTEM

As mentioned above, the growth of aviation provides the recovery of air transportation system that can be defined as to reform the air transport network system and redesign the regional airports. At this point, the structure of the system should be analyzed. In this respect, the increasing demand for air travel especially in domestic lines, the planning of regional air transportation network and the regional airports constitute the frame of regional air transportation system. Namely, there are three elements of the structure of the system: demand, network plan and airports.

3.2.1 The Increasing Demand for Air Travel

The number of domestic passengers has grown by 139% since 2003 in Turkey, while that is %5 in the world.[118] Besides, the Boeing Company predicts a growth on Turkish aviation by 9% in five years time.[119] By the help of globalization, privatization, liberalization, EU, regional jets, tourism and their impacts on economic and social structures of Turkey, the perception of the aviation industry changed, which caused the growth of air travel demand. (Figures 3-2 and 3-3; Table 3-1)

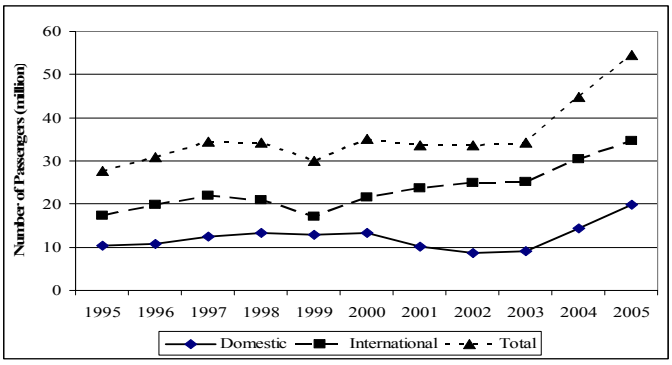

Figure 3-2 Passenger Traffic Growth in Turkey (Source:www. dhmi.gov.tr.)

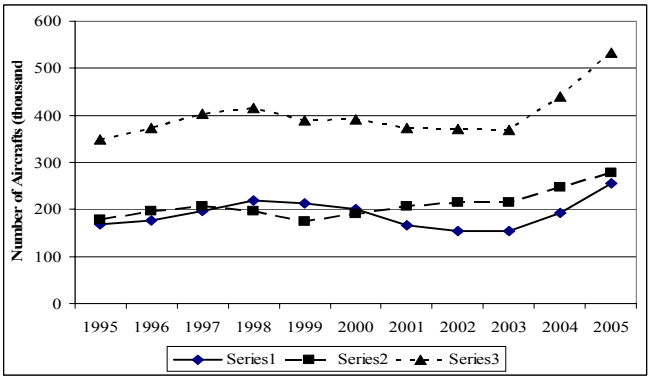

Figure 3-3 Aircraft Traffic Growth in Turkey (Source: www. dhmi.gov.tr.)

[118]DHMİ, "DHMİ Annual Report 2005". [WWW, Internet], Address: www,dhmi.gov.tr. [Last Accessed: 16.03.2007].
[119] Göksüzoğlu, Burcu, "Türk Havacılık Sektörü %9 Büyüyecek", 2005. [WWW, Internet], Address: .www.ntvmsnbc.com. [Last Accessed: 16.03.2007].

Table 3-1 Passenger and Aircraft Traffic Growth in Turkey (Source: DHMİ 2005, www. dhmi.gov.tr.)

YEAR	PASSENGER			AIRCRAFT		
	domestic	**international**	***Total***	**domestic**	**international**	***Total***
1995	10.347.528	17.419.851	27.767.379	169.018	179.431	348.449
1996	10.862.539	19.918.123	30.780.662	176.040	196.446	372.486
1997	12.413.720	21.982.614	34.396.334	197.103	206.711	403.814
1998	13.238.832	20.960.847	34.199.679	218.155	196.830	414.985
1999	12.931.771	17.079.887	30.011.658	213.078	175.628	388.706
2000	13.339.039	21.633.495	34.972.534	200.841	190.369	391.210
2001	10.057.808	23.562.640	33.620.448	167.500	206.002	373.502
2002	8.697.864	24.927.311	33.625.175	155.353	215.389	370.742
2003	9.125.298	25.141.870	34.267.168	154.201	214.193	368.394
2004	14.427.969	30.361.101	44.789.070	192.698	247.540	440.238
2005	19.954.918	34.582.322	54.537.240	256.380	277.316	533.696

3.2.1.1 The Factors Behind the Increasing Demand

3.2.1.1.1 The Structure of the Economy of Turkey

There is a reciprocal relation between aviation and economy. Whereas, the development of aviation stimulates the economic activities in the country, the developments on the structure of economy designate that of air services.[120] So, in order to recognize the configuration of air transport, the structure of economy will be explained at this chapter.

While, the globalization and the liberalization of the world trade affected the international competition and transformations of economy on the world, the economy of Turkey could not develop parallel to these advances, in the 1990's. Due to that, the Gulf and Russian Crises and wrong policies of government on economy causing the financial crisis, the economic facilities and together with the quantity of GDP were decreased.[121]

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[120] Mark Smyth and Brian Perce, "Airline Network Benefits IATA Economics Briefing No:03.". IATA Economics, 2006. [WWW, Internet], Address: http://www.iata.org. [Last Accessed: 13.09.2007].

[121] SHGM. Information Note on Regional Air Transportation, 2006.

However, when Table 3-2 and Figures 3-4, and 3-5 are examined, it can be seen that the ratio of alteration on GDP is affected by that of air traffic. Namely, the low amount of GDP obstructs the aviation, especially the development of domestic air transport. On the other hand, the financial crises caused the high prices of fuel and extra taxes on air travel, which increased ticket fares. Additionally, the decrease on GDP and the increase on ticket fares reduced the air traffic in Turkey.

Table 3-2 The alteration ratio of GDP, passenger and freight traffic in 1960-1999 in the world. (Source: www.iata.org.)

Period	GSMH	Passenger Traffic	Load Traffic
1960-1970	4.8	13.4	17.8
1970-1980	3.6	9.0	9.3
1980-1990	3.0	5.7	7.2
1990-1999	2.9	4.4	7.0
1960-1999	3.6	8.6	10.7

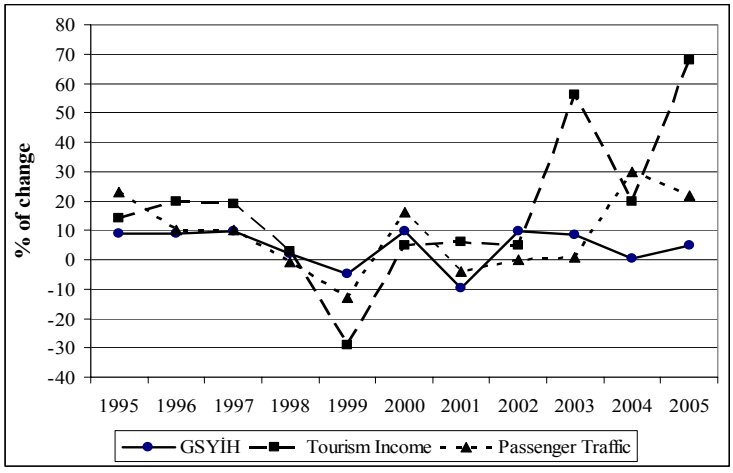

Figure 3-4 Alteration ratio of GDP, passenger traffic and tourism income in 1995-2005 in Turkey. (Source: plan9.dpt.gov.tr/oik32-havayolu/havayol.pdf.)

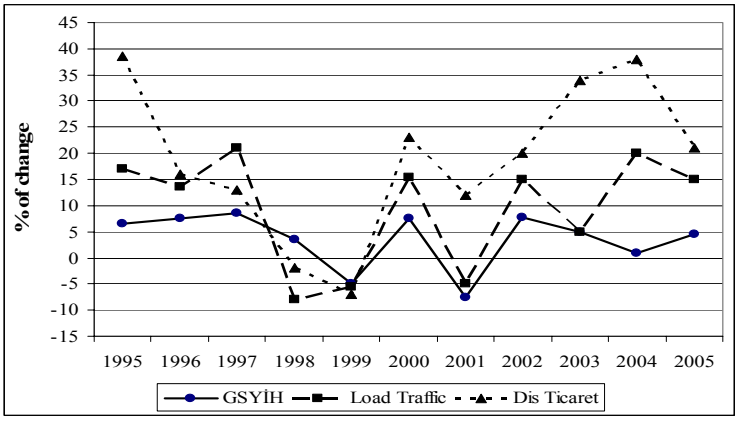

Figure 3-5 The alteration ratio of GDP, freight traffic and trade in 1995-2005 in Turkey. (Source: plan9.dpt.gov.tr/oik32-havayolu/havayol.pdf.)

In this respect, the Ninth Development Plan between 2007 and 2013 - the period of which the impacts of globalization together with technologic advances are felt very deeply - aims firstly to reform economy, and then to ensure the global competitiveness and regional developments by following closely the new trends on the world, with the intention that the economy will be increased by 7%.[122] Besides, the process of being the member of EU has affected the development of Turkey since 2005, which has created transformations on economic and social life. Because of this process, the business between Europe and Turkey has increased; which has an important role on the growth of air traffic.[123]

In the 2000's due to the financial restrictions, the "privatization" reducing the role of government merely into modifying and controlling of economy and providing financial source rapidly was introduced inevitably. That's to say that, privatization provides the government withdraw from commercial business and returns its main functions, which demonstrates its effects especially on aviation. In this respect, whereas, Atatürk Airport was one of the first privatized, Sabiha Gökçen Airport whose owner is private sector was built in 2001. As for the global competitiveness that is based on becoming an expert on any

[122] DPT. "The Ninth Development Plan (2007-2013)", pp: 61-66. [WWW, Internet], Address: plan9.dpt.gov.tr. [Last Accessed: 20.12.2007]. (Translated from 9. Kalkınma Planı 2007-2013).
[123] DPT. "The Airport Transportation Report of the Ninth Development Plan", 2006. p.54. [WWW, Internet], Address: plan9.dpt.gov.tr/oik32-havayolu/havayol.pdf. [Last Accessed: 20.12.2007]. (Translated from DPT 9. Kalkınma Planı Havayolu Ulaşımı Özel İhtisas Komisyonu Ön Raporu, 2006.)

subject and the ability of using technology, has not been developed sufficiently, yet. Table 3-3 shows the place of Turkey in the order of global competitiveness in the world. [124]

Table 3-3 The place of Turkey in the ordering of the global competitiveness in the world (Source: plan9.dpt.gov.tr)

Criteria	**2000**	**2002**	**2005**
Number of Coutry Included	59	80	117
Competition Power in Development	40	69	66
- Technology	-	54	53
- Govermental Institution	-	63	61
- Macro Economy	-	78	87
Competition Power in Business	29	54	51
- Business Enterprise and Strategy	28	56	38
- Quality of National Business	29	55	51

When regional development is concerned, it will be possible by balancing the inequalities between the regions, especially those of among west and east sides of Turkey. These differences are due to the opportunities of employment, the social and economical structures, immigrants, the degree of incomes and geographical strands.[125] Table 3- 4 shows the order of regions according to socio-economic growth (SEG).[126] When this table is compared with Table 3-5 and Figure 3-6 that demonstrates the list of airports according to importance, it is seen that the former affects the latter. In fact, the first number of airport, Atatürk Airport in Istanbul is also the first in SEG and the third number of airport, Esenboğa Airport in Ankara is the second in SEG. Since, Antalya is the primary one in tourism; Antalya Airport is the second of airports, which demonstrates the importance of tourism on aviation. Namely, air transportation is related with socio-economic growth and

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[124] DPT. "The Ninth Development Plan (2007-2013)", pp: 28-29. [WWW, Internet], Address: plan9.dpt.gov.tr. [Last Accessed: 20.12.2007]. (Translated from 9. Kalkınma Planı 2007-2013).
[125] DPT. "The Airport Transportation Report of the Ninth Development Plan", 2006. p.54. [WWW, Internet], Address: plan9.dpt.gov.tr/oik32-havayolu/havayol.pdf. [Last Accessed: 20.12.2007].
[126] DPT. "The Ninth Development Plan (2007-2013)", p.55. [WWW, Internet], Address: plan9.dpt.gov.tr. [Last Accessed: 20.12.2007]. (Translated from 9. Kalkınma Planı 2007-2013).

tourism of regions that are extended with regional development plans.

In conclusion, the recent developments on economy have impacts on passenger growth providing higher income levels and also business travel actions providing higher economic activities, which is seen from the research that demonstrates the measures of investments on public sectors (Table 3-6). According to this survey, transportation and communication have the highest amount of investments which explains the increasing demand of these industries on the global world. In fact, the Ninth Development Plan expects nearly 50% of passenger growth by the year 2013[127] (Table 3-7). Also, Table 3-8 shows the top 20 countries ranked by AAGR in between 2005-2009. As for this research, Turkey is the fifth country on the passenger growth by 8,9% and also the eleventh country on the freight growth by 8,6% in the world.[128]

Table 3-4 The ordering of regions according to socio-economic growth (SEG). (Source: plan9.dpt.gov.tr)

Regions	**SEGE (2003, through 26 Region)**	**GSYİH per person (2001, TR=100)**	**Sectoral Structure of Employment (2005)**			**Civilisation Percentage (%) (2000)**	**Migration Percentage (in thousand) (2000)**
			Share of Agriculture (%)	**Share of Industry (%)**	**Share of Maintenance (%)**		
TR10 (İstanbul)	1	143	0.7	37.0	62.4	90.7	46.1
TR51 (Ankara)	2	128	7.3	16.0	76.6	88.3	25.6
TR31 (İzmir)	3	150	18.1	27.7	54.2	81.1	39.9
TR41 (Bilecik,Bursa,Eskişehir)	4	117	18.3	37.8	43.8	76.4	38.7
TR42 (Bolu,Düzce,Kocaeli,Sakarya,Yalova)	5	191	20.4	26.8	52.8	57.2	-9.5
Turkey	-	100	29.5	19.4	51.1	64.9	-
TRA1 (Bayburt,Erzincan,Erzurum)	22	50	62.0	3.5	34.5	57.3	-43.5
TRC2 (Diyarbakır,Şanlıurfa)	23	54	38.1	5.7	56.1	59.1	-39.5
TRC3 (Batman,Mardin,Şırnak,Siirt)	24	46	29.3	10.0	60.8	59.6	-46.8
TRA2 (Ağrı,Ardahan,Iğdır,Kars)	25	34	61.8	3.1	35.1	44.6	-57.3
TRB2 (Bitlis,Hakkari,Muş,Van)	26	35	48.0	6.3	45.8	49.3	-39.5

[127] Ibid. p.67.
[128] IATA. " Passenger Forecast 2005-2009." [WWW, Internet], Address:_www. iata.org. [Last Accessed: 20.12.2007].

Table 3-5 The list of airports according to passenger traffic (Source: ekutup.dpt.gov.tr/2003.asp-27k-.)

	PASSENGER TRAFFIC IN 2000 (DEPARTURE AND ARRIVAL)					
Airports	Domestic	%	International	%	Total of Domestic-International	%
(1) ATATÜRK	5,181,845	38.9	9,465,965	43.8	14,647,810	41.9
(2) ESENBOĞA	2,800,943	21.0	1,226,985	5.7	4,027,928	11.5
(3) A.MENDERES	1,226,294	9.2	1,281,095	5.9	2,507,389	7.2
(4) ANTALYA	676,925	5.1	6,779,733	31.3	7,456,658	21.3
(5) DALAMAN	272,941	2.0	1,566,761	7.2	1,839,702	5.3
(6) ADANA	662,778	5.0	234,282	1.1	897,060	2.6
(7) TRABZON	464,426	3.5	66,764	0.3	531,190	1.5
(8) MİLAS-BODRUM	272,525	2.0	835,444	3.9	1,107,969	3.2
(9) TOPLAM (1)-(8)	11,558,677	86.7	21,457,029	99.2	33,015,706	94.4
(10) OTHER AIRPORTS	1,773,665	13.3	176,396	0.8	1,950,061	5.6
TOTAL (9)+(10)	13,332,342	100	21,633,425	100	34,965,767	100

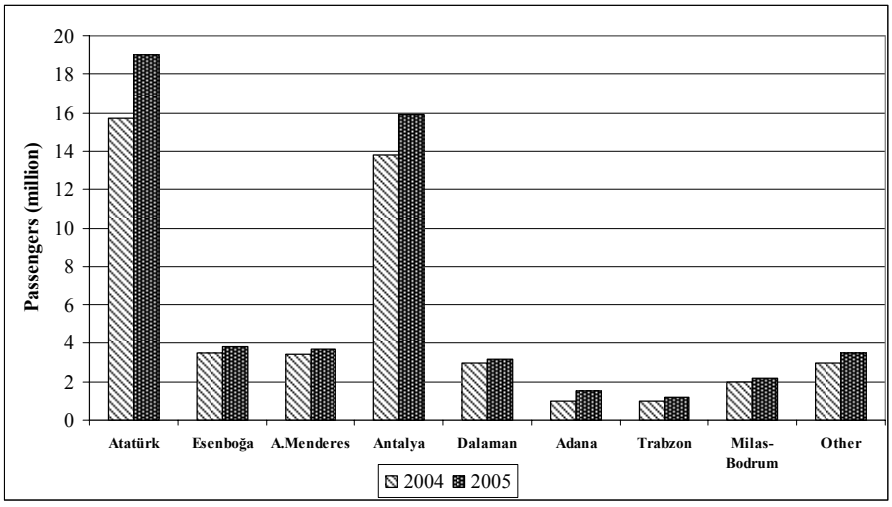

Figure 3-6 The passenger traffic on the major airports. (Source: ekutup.dpt.gov.tr/2003.asp-27k-.)

Table 3-6 The measures of investments on public sectors (Source: plan9.dpt.gov.tr.)

	1993	1994	1995	1996	1997	1998	1999	2000
Agriculture	186,997	130,301	81,690	186,716	241,209	177,906	152,266	195,458
Mine Industry	55,718	30,691	11,859	27,077	38,893	34,526	31,090	21,026
Manufacturing Ind.	68,755	57,971	129,764	165,270	118,970	66,336	72,456	96,938
Energy	307,272	169,241	154,242	278,918	362,473	443,234	298,240	379,828
Transportation	825,201	612,913	406,587	600,452	795,053	790,115	703,954	922,085
Railway	56,246	40,790	23,978	25,866	29,661	18,882	21,693	15,660
Maritime Line	6,426	8,079	7,440	9,111	12,514	9,346	12,938	6,728
Airline	80,681	48,043	28,492	68,106	99,290	152,460	153,012	152,267
Highway	358,602	312,910	204,134	369,890	457,715	384,155	312,886	429,172
Pipeline	21,177	16,219	13,591	11,122	36,561	65,298	50,951	140,848
Communication	302,069	186,872	128,952	116,357	159,311	159,982	152,473	171,534
Tourism	21,221	10,149	19,840	21,143	14,107	10,817	12,243	11,448
Residence	59,497	55,182	58,142	9,687	4,969	6,957	28,028	12,434
Education	255,748	137,563	129,730	185,680	340,408	327,264	299,600	264,376
Health	123,549	71,530	64,448	92,713	128,430	87,159	65,263	92,167
Other	448,107	397,131	282,623	448,824	792,519	228,694	251,841	323,745

Table 3-7 The aims of transportation for 2013 (Source: plan9.dpt.gov.tr.)

	2006	2013	2007-2013
Primary railway length (km) a) New railway construction b) Renovation of railways	8,257	9,195	938 938 1,000
Partitioned highway length (km)	9,441	15,000	5,559
Highway Length covered with BSK (km)	7,500	14,500	7,000
Airport Passenger Traffic (million)	60	110	50

Table 3-8 a) The top 20 countries with over 2 million annual passengers b) The top 20 countries with 10.000 tonnes of freight ranked by AAGR[129] between 2005-2009. (Source: [1] IATA, Passenger Forecast 2005-2009. Available in www. iata.org.)

Country:	AAGR 2005 - 2009
Poland	11.2%
China	9.6%
Czech Republic	9.5%
Qatar	9.2%
Turkey	8.9%
Romania	8.5%
Malaysia	8.4%
India	8.4%
United Arab Emirates	7.6%
Pakistan	7.4%
Korea, Republic of	6.8%
Jordan	6.8%
Australia	6.7%
Thailand	6.7%
Macao	6.6%
Iran	6.6%
Kuwait	6.5%
Taiwan	6.5%
Ireland	6.4%
Egypt	6.4%

*AAGR: Average Annual Growth Rate

Country:	AAGR* 2005 - 2009
China	14.4%
Qatar	12.5%
Sri Lanka	12.2%
Macao	11.6%
Korea, Republic of	10.7%
Malaysia	10.0%
Mexico	9.9%
India	9.7%
Czech Republic	9.7%
Oman	8.9%
Turkey	8.6%
Russian Federation	8.5%
Argentina	8.1%
Indonesia	8.0%
Azerbaijan	7.8%
Pakistan	7.3%
UAE	7.3%
Japan	6.9%
Thailand	6.9%
Kuwait	6.6%

3.2.1.2 Privatization: Turkish Civil Aviation Law in 1983

The first activities about regional air transport began in 1976, by constructing short take off landing (STOL) airports in small regions to feed the major ones, and then stimulated with the "Turkish Civil Aviation Law" bearing number 2920 in 1983.[130] While this law let the government "lift the limits on airline flights", by giving the right to the private sector on civil aviation, it also provided Turkey to enter to a new period. Namely, it brought out the "privatization" process thought to be the initial point of liberalization. Hence, new private airlines has established and facilitated with increasing fleet capacities on air transportation, in a short period. In the following years, due to the privatization, THY has become on a current issue, the Transport Ministry arranged domestic airline services on behalf of THY by forbidding private airlines to fly on the route of THY. Also, the Gulf Crisis, the virus of SARS, the battle of Iraq and the September 11th caused negative impacts

[129] AAGR (Average Annual Growth Rate)
[130] SHGM. "Information Note on Regional Air transportation", 2006.

on aviation industry. In conclusion, the studies on liberalization of airlines were stopped, most of private airlines were closed and THY became the patronage of domestic airlines, again.[131]

3.2.1.3 Deregulation of Air Transport System in Turkey: Liberalization

In Turkey, to constitute integrated and sustainable air transport system, government has started the "Project of Regional Air Transport", the focal point of which provided with the deregulation of air transportation system by the law of liberalization of Transportation Ministry in 2003. With this law, government brought an end to THY that it had monopolized domestic air services with the very high ticket prices and had obstructed to increase of air traffic, and gave rights to the private airline companies in order to encourage no-frills, low-cost airlines providing "cost and time savings" to operate in Turkey, which has increased the demand of air travel. By the investments of private airline companies, the increase in the capacity of domestic airport transportation was almost 60 % in 2004 compared to 2003. At the end of the year 2004, the share of the private airlines in domestic flights has increased to 30 % and also the passenger capacity of THY has increased by an amount of 15 %. This amount was 35 % in the first eight months of 2005 in comparison with the same period of the previous year.[132]

Even though the initial point of the law was constituted in 1983 by the privatization process, the date of 2003 was late for liberalization, when it is thought that the USA and the Europe which deregulated their aviation systems in the 1980's have extended liberalization on the world scale by having reciprocal agreements with other countries such as "open skies". The act of liberalization offered airline companies that the autonomy to arrange airfares and enter to any route, which provided competition between airlines together and discount in some taxes. As for Ender Gerede, competition increases the activity and productivity of airline companies and also the quality of air services. At present, special airlines are the no-frills, low-cost airlines services for domestic routes. Their generally

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[131] DPT. "The Airport Transportation Report of the Ninth Development Plan", 2006. pp:14-15. [WWW, Internet], Address: plan9.dpt.gov.tr/oik32-havayolu/havayol.pdf. [Last Accessed: 20.12.2007].
[132] Ibid.

constitute of regional jets, which ensures the policy of regional air transport by opening the inactive airports to travel. As a result, the competition among the airlines affects the facility of them and also that of THY to modernize the fleet and decrease ticket fares.[133]

3.2.1.4 Regional Jets

After the deregulation of aviation in 2003, the Transport Ministry has begun to "the Project of taxi-aircraft" intending to spread the regional air transport by using regional jets that affords thinner regional routes feasible, being previously unfeasible, with a range of 20-70 average capacities of passengers. Especially, providing the frequency and also the greater choice, speed and comfort to the passengers attracts the business market. Thus, the no-frills, low-cost airlines have constituted their fleet with regional jets in order to develop their services among the regions.

3.2.1.5 Changes in Demands for Travel

As the time and speed get importance due to the globalization process, the perception of communication has transformed, which affected the living standards of Turkey. Also, rising GDP and disposable income stimulated this alteration. Additionally, the transportation system and also aviation industry changed. The passengers who traveled by car, bus, train or sheep, have begun to use aircrafts, particularly on the highland and island regions. Especially, visiting friends and relatives (VFR) traffic, leisure and business traffic have increased the demand of aviation.[134]

In Turkey, 60% of the population lives in the cities because of the immigration and the students attending school abroad, which increases the VFR traffic. This kind of traffic generally wants to fly in obvious dates of the year, like religious or national festivals and

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[133] Ender Gerede. "Uç Türkiye Uç: İç Hat Havayolu Taşımacılığındaki Gelişmeler". Dünya Gazetesi, 2004. [WWW, Internet], Address: www.dunyagazetesi.com.tr/news. [Last Accessed: 13.09.2007].
[134] DHMİ, "DHMİ Annual Report 2005". [WWW, Internet], Address: www,dhmi.gov.tr. [Last Accessed: 16.03.2007].

holidays when seasonal low cost services are carried out by airlines, or wants to make last minute travel arrangements, in terms of urgency, which requires the frequency and alternatives of air services which provided by regional jets. As for leisure traffic, the passengers tend to take shorter holidays to far destinations lasting 1 or 2 nights, especially for the weekend, which requires short-travel period. Namely, it seems that the leisure traffic is feasible by air travel. When business traffic is concerned, no frills, LCCs provide reliable, punctual and cheap services for business passengers, which in turn, get fare and time saving for them.[135]

3.2.2 The Regional Air Transportation Network System: Hub-and-spoke System

3.2.2.1 The Period of Lacking Air Transportation Network System

With the privatization of airlines in 1983, the government made the project of "one airport to each city" in order to spread air transportation to all of the country.[136] As a result of this policy, the STOL (short take off and landing) airports that feed the major ones constructed and the number of airports in Turkey has reached about sixty airports since 1983.[137] While twenty of the airports are operated by DHMİ, nineteen of them that are military ones and given the right to civil flights operated by DHMİ and the military authorities and the others are by private sector.[138] According to their functions and traffic values, airports are classified in three groups, by DHMİ Final Study Report.[139] (Figure 3-7)

Considering this grouping system, Turkey seemed to have a very well connected air transportation system, which was in contrary until 2003. Although there were three groups of airports, there was no sufficient demand and no organization between airports to

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[135] Cem Galip Özenen."Havaalanı Yatırımları İçin Dünyadaki Uygulamalar ve Türkiye İçin Öneriler". Ankara: DPT 2666. (Translated by author)
[136] DHMİ, "DHMİ Final Report", ERKA-AS &MMM, Ankara, CD-ROM, 2000.
[137] SHGM, "Information Note on Regional Air Transportation", 2006.
[138] DHMİ, "DHMİ Annual Report 2005". [WWW, Internet], Address: www,dhmi.gov.tr. [Last Accessed: 16.03.2007].
[139] Evrim Demir, Airport Planning and Air Terminal Design : A Proposal for the New Adana (Çukurova) International Airport. Master Thesis-METU, Ankara, 2002. pp: 74-77.

constitute air transport network system. In fact, 95% of air traffic was serviced by the major airports in the first group.[140] Due to airline companies functioned from point to point with direct flights; airports facilitated individually which caused some airports in an inactive position. Especially, at the regional airports having not enough air traffic, the thin routes having low frequency and low load factor were constituted by airlines, which caused to close of these airports. Also, big aircrafts in THY stimulated this situation having very big sizes and also high maintenance cost in comparison with their low-capacity passengers.[141] Additionally, Airports of Adıyaman, Kahramanmaraş, Siirt, Uşak, Sivas, Tokat, Çanakkale and Balıkesir which were considered to damage the national economy were closed, in 2002.[142] As a consequence, owing to lack of air transportation system, the policy of "one airport to each city" could not attain its aim.

Figure 3-7 Airports operated by DHMİ (Source: www.dhmi.gov.tr)

[140] Cem Galip Özenen."Havaalanı Yatırımları İçin Dünyadaki Uygulamalar ve Türkiye İçin Öneriler". Ankara: DPT 2666. (Translated by author) -.
[141] Ender Gerede. "Uç Türkiye Uç: İç Hat Havayolu Taşımacılığındaki Gelişmeler". Dünya Gazetesi, 2004. [WWW, Internet], Address: www.dunyagazetesi.com.tr/news. [Last Accessed: 13.09.2007].
[142] Ibid.

3.2.2.2 The period of regional airport transportation network system

"Airport must be accepted as system's."[143] There are two domains of system: the airport system defined as the relations with other airports to form a sustainable air transportation system and the airport as a system described as interrelations between the elements of airports.[144] So, merely airports are not enough to spread the aviation all over the country, rather the air transportation network system and the planning of the network that is a rendering of the interactions between the airports should be constructed.

The more time and speed get importance, with the effects of globalization, the more the social and economic life is dependent on aviation industry providing hereto-impossible trips and relations, inevitably.[145] Accordingly, in Turkey, being a developing country, the aviation industry was deregulated in 2003, in order to acquire integrated and sustainable air transportation system, and the government made the policy of "regional air transportation system" that can be defined as hub-and-spoke system.[146] With this policy, providing low-cost and systematized network of air transportation, Turkey has entered to a new period. At this system, all passengers fly to major airports defined as hubs, and then they are distributed through regional jets to a number of smaller regional airports described as spokes. Namely, air transportation system transformed from linear route structure into radial route in which regional airports feed major ones, acting like satellite runways of them. As for Evrim Demir, regional air transportation network generates systematized organism of air transportation.[147] While regional airports connect regions to the major airports expanding the major airport's influence area and reducing the congestion, the cross flights in-between regions are also realized. Besides, recent developments in economy, rising GDP and introduction of regional jets led to increasing demand for air travel, which stimulated this policy.

Regional air transportation network system consists of origins and destinations

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[143] Evrim Demir, Airport Planning and Air Terminal Design : A Proposal for the New Adana (Çukurova) International Airport. Master Thesis-METU, Ankara, 2002.p.158.
[144] Ibid. p.5.
[145] SHGM. "Information Note on Regional Air Transportation", 2006.
[146] Brian Graham and Clair Guyer. "The Role of Regional Airport and Air Service in the UK." Journal of Transport Geography. Vol 8, 2000. pp: 249-262
[147] Evrim Demir, Airport Planning and Air Terminal Design : A Proposal for the New Adana (Çukurova) International Airport. Master Thesis-METU, Ankara, 2002. p.160.

defined as major and regional airports, respectively and flights between them designated by the existing movements of passenger and probable movements in the future.[148] There are three movements of passengers: the first is the movement of passengers living in the region and visiting other regions by air travel, the second is that of people who lives in another place and travel to the region, and the last one is constituted by "transfer passenger whose origin and destination do not coincide with the region where the airport is located." As a result, the characteristics of regions and the accessibility of airports are major determinants of the movements of passengers.

There is a reciprocal connection between regions and regional airports. Whereas, the activities in regional airports like the frequency of flights and the number of employment at the airport contribute to the socio-economic structure of regions, the features of regions like business, employment, population, tourist attractions, and geography have impacts on the movements of passengers traveling by air.[149] Besides, the accessibility of the airport both in its region and in the air transportation network has an important impact for the movements of passengers, especially for the transfer ones. While major airports transform into hubs in regional and also continental scale, transfer passengers are of significance. In fact, in Heathrow Airport, transfer passengers are one third of total passengers and in Frankfurt this ratio is the half of the percentage, which demonstrates that these airports are hubs in the global world affording advantageous for their regions and countries.[150] So, that some airports become hubs provides valuable opportunities for Turkey being a developing country and situated between the three continents (Europe, Asia and Africa).

In conclusion, regional air transportation network system and network planning are the key factors to be able to construct sustainable and integrated air transportation, for the socio-economic development of Turkey. However, the planning of the system which creates the network among the airports, namely the Air Transportation Plan and the Master Transportation Plan that provides the integration of air transport and surface modes in order to get better public transport access to airports have not existed in Turkey, yet. Rather the

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[148] Brian Graham and Clair Guyer. "The Role of Regional Airport and Air Service in the UK." Journal of Transport Geography. Vol 8, 2000. pp: 249-262

[149] DPT. "The Airport Transportation Report of the Ninth Development Plan", 2006. pp:14-15. [WWW, Internet], Address: plan9.dpt.gov.tr/oik32-havayolu/havayol.pdf. [Last Accessed: 20.12.2007].

[150] Ibid. pp:12-14.

short term political strategies are carried out like the project of "One Airport to Three Cities"[151] that aims to create sustainable and integrated air transportation network system by constructing and reforming regional airports and "the Project of taxi-aircraft"[152] that intends to spread the regional air transport by using regional jets, which seems to be the problem for the future of the regional air transportation network system.

3.2.3 Regional Airports

The aim of Civil Aviation for 2013 is the spreading of modern airports all over the country together with the modern aircrafts and connecting them to the cities with the rapid transportation modes.[153] Being the main infrastructure of air transportation, airports reflect the current demands on aviation. In this respect, the regional air transportation system necessitates rendering of its concept on airports defined as hubs-and-spokes that are not ready to respond the policy. Thus, with the policy of regional air transportation system in Turkey, redevelopment and reconstruction of the existing airports and the planning of new airports have begun in order to attain modern design concept, which brings out new design objectives.[154]

Firstly, the revitalization of major airports started by reconstructing the Atatürk, Antalya, Esenboğa, Dalaman and Adnan Menderes Airports, with the Built-Operate-Transfer (BOT) model. Secondly, for the regional ones, the government transformed the policy of "One Airport to Each City" into "One Airport to Three Cities". According to this policy, while some new regional airports are put on the agenda, the existing and inactive ones have begun to be improved.

As for new regional airports, four new regional airports are put on the agenda, according to Government Port and Airfield Administration (DLHİ).[155] One of them will be

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[151] Ender Gerede. "Uç Türkiye Uç: İç Hat Havayolu Taşımacılığındaki Gelişmeler". Dünya Gazetesi, 2004. [WWW, Internet], Address: www.dunyagazetesi.com.tr/news. [Last Accessed: 13.09.2007].
[152] Ibid.
[153] DPT. "The Ninth Development Plan (2007-2013)", pp: 79-80. [WWW, Internet], Address: plan9.dpt.gov.tr. [Last Accessed: 20.12.2007]. (Translated from 9. Kalkınma Planı 2007-2013).
[154] Evrim Demir, Airport Planning and Air Terminal Design : A Proposal for the New Adana (Çukurova) International Airport. Master Thesis-METU, Ankara, 2002. p.160.
[155] Personal Interview with Halis Ertunç. DLHİ, Ankara, 2006.

Diyarbakır Regional Airport, which is thought to be located between Diyarbakır, Batman and Mardin. While Batman has military airports, Mardin has very small-sized airport. The second one will be Kütahya Regional Airport. It is thought to be located in Altuntaş, between Kütahya, Afyon and Uşak. There is also a military airport in Afyon and a small-sized airport in Uşak. The other one will be Çukurova Regional Airport to feed Adana Airport which cannot be expanded because of the lack of suitable land for new runways. Finally, the fourth one is Konya- Karaman Regional Airport. Konya has a military-civil airport. But, owing to the military airport, the foreign airlines cannot have destination on this area. Besides, Hatay Regional Airport is under construction, which aims to feed Adana Airport and also relieves the congestion of air traffic in Atatürk Airport by providing destinations for the neighboring countries like Syria.

As for existing regional airports, while some of them are transformation of military airports into civil ones, the others are stol airports that usually have a runway with 800-1000 m, the apron and taxiway responding to minimum requirements and flights with small aircrafts in daytime because of having no runway illumination and control tower.[156] Namely, regional airports in Turkey look like air transportation points rather than airports and also they cannot cater the increasing demand of aviation. So, it is inevitable to adapt the existing regional airports according to ICAO (International Civil aviation Organization) standards, which caused the period of development of existing regional airports. In this respect, while, the Erzurum, Van, Diyarbakır, Elazığ, Gaziantep, Malatya Airports were expanded and renewed, the closed airports of Zonguldak (Çaycuma), Sivas, Uşak, Tokat and Balıkesir (Center) were improved and opened to the air traffic in 2006. In 2007, Kayseri, Denizli (Çardaklı) and Urfa Airports will be operated for aviation.[157]

As a result of this development process, the regional airports attain the infrastructural standards of ICAO. Nevertheless, the terminal buildings are still far away from having international modern airport design standards and the concept of being air transportation node and the growth pole in the regional economy, which can be seen from the examples of the Tokat, Adıyaman, Kahramanmaraş, Malatya and Siirt Airports. (Figures 3-8 – 3-13)

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[157] DHMİ. [WWW, Internet], Address: www.dhmi.gov.tr. [Last Accessed: 13.09.2007].

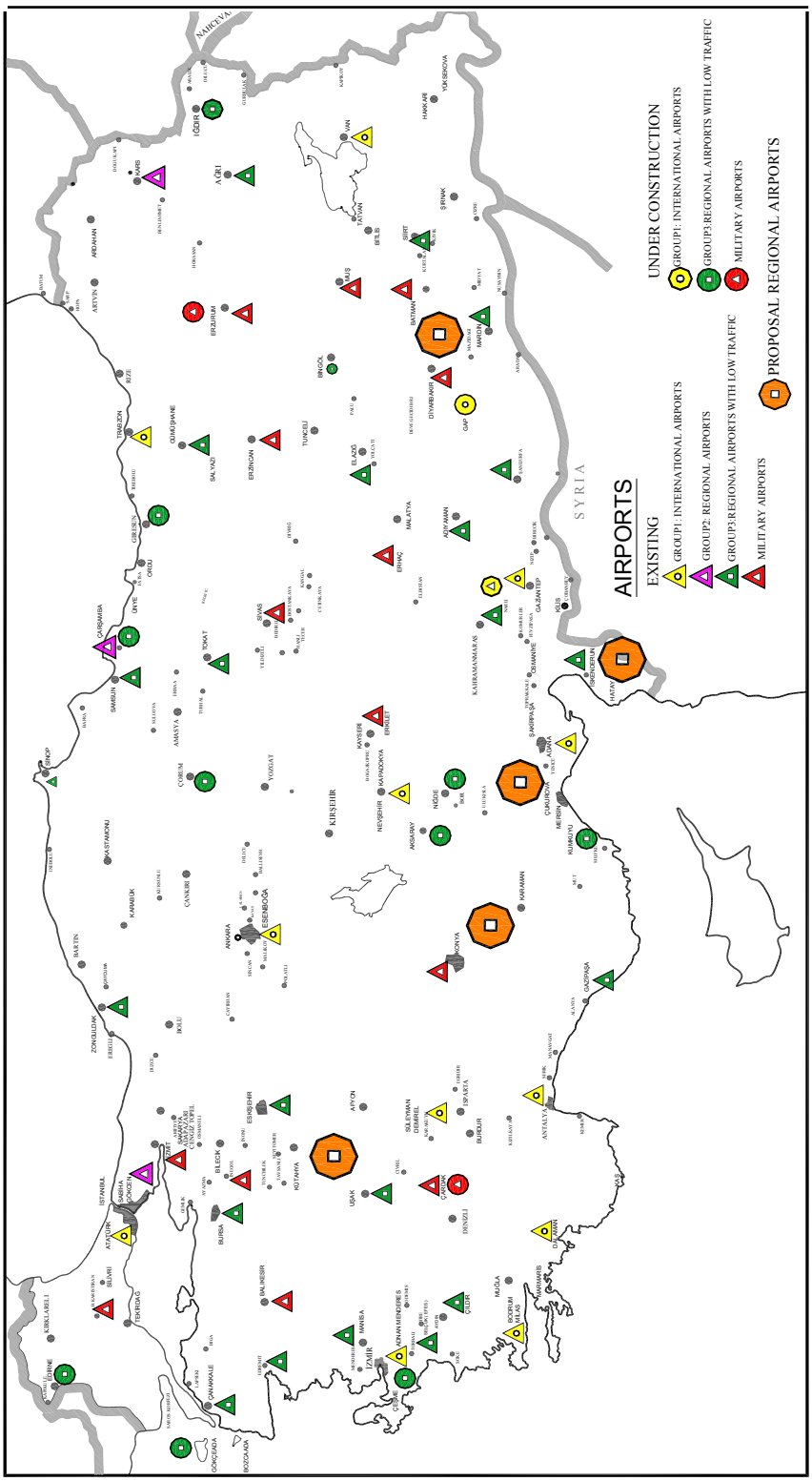


Figure 3-8 The existing and proposal Airports in Turkey (Source: DLHİ Archieve)

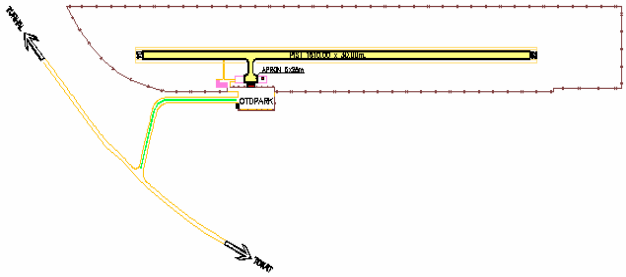
Tokat Airport:	
Owner: Provincial Assembly. **Administration:** DHMİ	
Year: 1945	
Location: 20 km far away from the city centre	
Functional type: Domestic **Capacity:** **Group:** Third group	
Runway: 1924mx30m **Apron:** 50mx85m (for 1 aircrafts)	
Terminal: 180m^2 , reinforced concrete, one-floor. There is departure and arrival lounges, check-in desks, baggage claiming, and general otopark Closed to air traffic in 2001. Reopened in 2006.	

Figure 3-9 Tokat Airport. (Source: **www.dhmi.gov.tr**.)

Adıyaman Airport:	
Owner: Governorship. **Administration:** DHMİ	
Year: 1998	
Location: 25 km far away from the city centre	
Functional type: Domestic **Capacity:** 300.000 passenger/year **Group:** Third group	
Runway: 2540mx30m **Apron:** 50mx80m (for 1 aircrafts)	
Terminal: 1200m^2 , prefabricated, one-floor.	

Figure 3-10 Adıyaman Airport. (Source: www.dhmi.gov.tr.)

Kahramanmaraş Airport:	
Owner: Provincial Assembly. **Administration:** DHMİ	
Year: 1996	
Location: 5 km far away from the city centre	
Functional type: Domestic **Capacity:** 400.000 passenger/year **Group:** Third group	
Runway: 2500mx30m **Apron:** (for 1 aircrafts)	
Terminal: 1344m^2 , reinforced concrete, one-floor. There is departure and arrival lounges, VIP, check-in desks, baggage claiming, and general otopark for 110 cars. Also, there is a tower, power center and the control building.	

Figure 3-11 Kahramanmaraş Airport. (Source: **www.dhmi.gov.tr**.)

Malatya Airport:	
Owner: HKK. **Administration:** DHMİ, HKK	
Year: 1941	
Location: 34 km far away from the city centre	
Functional type: Domestic **Capacity:** passenger/year **Group:** Second group	
Runway: 3350mx45m **Apron:** 110mx100m (for 2 aircrafts)	
Terminal: 1669m^2 , reinforced concrete, three-floor. There is departure and arrival lounges, VIP, check-in desks, baggage claiming, buffet, wc and general otopark for 98 cars, in the ground floor. There is cafeteria, bar, kitchen and offices in the gallery floor.	

Figure 3-12 Malatya Airport. (Source: www.dhmi.gov.tr.)

Siirt Airport:	
Owner: Governorship **Administration:** DHMİ	
Year: 1998	
Location: 13 km far away from the city centre	
Functional type: Domestic **Capacity:** 100.000 passenger/year **Group:** Third group	
Runway: 1600mx30m **Apron:** 80mx50m (for 2 aircrafts)	
Terminal: 300m^2 , reinforced concrete, one-floor. There is departure and arrival lounges, check-in desks, baggage claiming,	

Figure 3-13 Siirt Airport. (Source: www.dhmi.gov.tr.)

CHAPTER 4

NOTES ON SUPERMODERNISM, PLACES AND NON-PLACES

4.1 GENERAL VIEW

While the dynamics of today - the globalization process, economic growth together with late-capitalism, increasing the number of population living in cities and improvements in technology, communication equipments and electronic media - change the social, political and economic structures of societies, they also provide instable transformations on the contemporary cities. Considering that the city and the architecture have a reciprocal connection, how architecture is influenced from these changes gets importance in order to realize the reasons of built works. This is the context, in which this chapter draws the picture of architecture in the contemporary world in order to realize the architecture of regional airport terminals.

4.2 SUPERMODERNISM

> We are living on the horizon of a new era- that of the super-modernist age.[158]

Together with the relativity and quantum theory, developments in modes of production and improvements on communication and transportation technologies have

[158] Soft-Where Specifics of Site DX Raiden. [WWW, Internet], Address: www.physicsroom.org.nz/log/archieve/10/soft/ [Last Accessed: 07.08.2007].

altered the perception of time and space, which has caused to the speed of change in the cultural, social and economic structures of societies. These ongoing mutations of the urban dynamics have undercut the stability of contemporary life and provided instable transformations.

According to the anthropologist Marc Auge, there are three main transformations on the contemporary world: "acceleration of history, spatial overabundance and increase of individuation."[159]

The first transformation is the outcome of the extension of the life expectancy that provides to pass from the coexistence of three generations to that of four generations. In the event of this case, the number of events has accelerated and this has changed our perception of time and also the meaning of happenings. As for the second one, technological advances like aeronautics, satellite communication and the Internet, have changed the scale of the world and accelerated the globalization process. The instant and also simultaneous access to information and events taking place on the other side of the world has provided overabundance of images and also overabundance of relations to the actual physical space.[160] Thus, while "spatial shrinking of the world" fits the world into one's vacation or living room[161], it also causes physical modifications on the urban fabric. As a result of these two changes, liberated from time and space, the communication of individual has begun to be achieved by telematic media images like signs, texts, screens and announces, which constitutes the third transformation. Even if an individual is in the crowded space, he always feels solitary, and this creates the spaces having no sense of social life.[162]

Described as "excess" all of these transformations indicate the "cultural and social shift from classic modernist ideals"[163]. For Edward Said, we have begun to live in "a general condition of homelessness" where deterritorialized or differently territorialized identities, transnational culture flows and mass movements of populations and blurs

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[159] Marc Auge. Non-Places: Introduction to an Anthropology of Supermodernity. Trans. John Howe. London, New York : Verso, 1995, pp:24-41.
[160] Non Places-Auge (1995).[WWW, Internet], Address www.d624.org/thesite/page02.html [Last Accessed: 07.08.2007].
[161] Soft-Where Specifics of Site DX Raiden.[WWW, Internet], Address: www.physicsroom.org.nz/log/archieve/10/soft/ [Last Accessed: 07.08.2007].
[162] Marc Auge. Non-Places: Introduction to an Anthropology of Supermodernity., translated by John Howe, London New York : Verso, 1995, p. 40.
[163] Soft-Where Specifics of Site DX Raiden.[WWW, Internet], Address: www.physicsroom.org.nz/log/archieve/10/soft/ [Last Accessed: 07.08.2007].

between the terms of "here" and "there", "center" and "periphery", "colony" and "metropole" are created.[164] Namely, these changes cause to form new contemporary life, which signifies the culmination of modernity and the emergence of a new situation. In this respect, contemporary world has begun to be defined as "2nd modernity", "after-modernity" or rather "supermodernity". As for Marc Auge, our period is described by supermodernity that is self-contained and puts the old into a particular spectacle like the quotations in a written content, when compared with the modernity constituted the linking of old and new.[165] With respect to Gey Espinhesa, the supermodernity substitutes the man with the machine, makes human contacts embarrassing and puts up walls to defence the individual rights.

As a result, characterized by "excess of time, space and ego", the supermodernist era witnesses the instable transformations of urban dynamics, which inevitably affects the city and its architecture.

4.2.1 Effects of Supermodernism on the City

> If there is to be a new urbanism, it will not be based on the twin fantasies of order and omnipotence, it will be the staging of uncertainty, it will no longer be concerned with the arrangement of more or less permanent objects but with the irrigation of territories with potential.[166]

The transformations of urban dynamics - social, cultural and economic powers of societies - cause physical transformations on the urban factory, which can be summarized as:

"- suburban development and its diffuse character,
- the importance of mobility and the possibilities of choice in each shift,
- the notion of centrality as renewed through the construction of malls and

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[164] Place/identity. [WWW, Internet], Address: www.christianhubert.com/hypertext/ [Last Accessed: 07.08.2007].
[165] Marc Auge.. Non-places: Introduction to an Anthropology of Supermodernity., translated by John Howe, London New York : Verso, 1995.p.56.
[166] Jean Attali. "A Surpassing Mutation". Mutations. Barcelona: Actar, pp:268-279.

entertainment centers,

- the new perception of urbanity,
- the new forms of social cohabitation,
- the growing diversification between the symbolic sites (the historical center) and the sites of everyday passage chosen by the collective unconscious,
- the new relation between cities and nature or cities and country
- the impact of information technology and the media on the city's public space."[167]

These changes constitute new urban landscape that is in permanent development, fragmented, and diffuse.[168] In other words, the single, rational, continuous, homogeneous and ordered urban model is transformed into multiple, discontinuous and heterogeneous one. Under the pressure of this new urbanism, cities gain more complex and uncertain characters[169] and respond to these transformations by creating two different concepts: "generic city" and "disjunctive city".

Due to that architecture takes its function and program from the city, instable transformations on urban dynamics affect architectural programs. [170] In this context, when architectural programs can not restructure themselves according to urban transformations, cities can erase all tasks of architectural programs and respond these changes in a "direct and unconscious" manner by constituting what Rem Koolhaas called "generic cities"[171] (Figure 4-1). According to him, since generic is defined as "what is left after identity is stripped", generic city is "anonymous, authorless and neutral urban environment"[172]. In addition, while architectural programs indifference to the changes of the era, at the same time, they transform architecture into a passive agent in the city.

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[167] Yorgos Simeoforidis. "Notes for a Cultural History between Uncertainty and the Contemporary Urban Condition" Mutations. Barcelona: Actar, 2000, pp:414-425.
[168] Ibid.
[169] Özlem Mutlu. Understanding City as an Architecture and Non-Architecture Program: Learning From Ankara. Ankara: METU, 2006, pp:1-6.
[170] Ibid. p.17.
[171] Ibid. p. 4.
[172] Ibid. p. 18.

Figure 4-1 Home Depot – the number three retailer in America-adds a new store on average every 52 hours. (Source: Mutations. Barcelona: Actar, 2000.)

In the supermodernist era, the forms of the production and distribution of goods and people have changed, because of the logic of the late-capitalist phenomena that "mobility and liquidity of capital, labor, goods, raw materials and tourists".[173] In capitalist economy, there is always a trend in rapid constant mass production, in finding new methods of creations and new market places, which makes economic issues the main dynamics of the cities.[174] Having a dynamic structure, capitalist production tends to expand all over the world transforming the world into integrated single economic place.[175] So, differences between geographies and time are not wanted. The improvements on communication and information technology and globalization process are used to turn the whole world into a homogeneous, unified, centered, coherent signifier, deprived of contradictions and differences. In this respect, historical centre of the cities and legal and regional boundaries

[173] Saskia Sassen, "The Global City: Introducing a Concept and Its History." Mutations. Barcelona: Actar, pp: 104-114.
[174] Jean Attali. "A Surpassing Mutation".Mutations. Barcelona: Actar, pp:20-23.
[175] Hakkı Yırtıcı. Çağdaş Kapitalizmin Mekansal Örgütlenmesi. İstanbul Bilgi Üniversitesi Yayınları, 2005. (translated by author)

are erased in order to make invisible boundaries between cities.[176] Thus, having no relationship with the context of the instable transformations of the contemporary world, generic cities are created. For example, the suburban of America is constituted by the construction of neutral, anonymous malls and amusement centers, which provides new social life and also distinguishes the historical centers from centers of everyday life[177] In other words, created for being indifference to the transformations of the era, generic cities are supported by late-capitalism mass-production system which wants to fix and stabilize the world in order to disregard the transformations occur (Figure 4-1).

On the other hand, there is another concept of the city which prefers to face up to these transformations of contemporary world and restructure architectural programs along with them: what author defined as "disjunctive city" (Figure 4-2). The era of Supermodernity is described by uncertainty and indeterminacy.[178] "No more certainties, no more continuity". As for Michael Foucault, "the absence of intermediary forms, the non-existence of a continuum existing in space or time" is the indication of the emergence of a new field."[179] From this perspective, Bernard Tschumi states that the uncertainty attitude brings about the "culture of disjunction", defined as "the act of disjoining or state of being fragmented, disjoined, separation, disunion".[180] Also, acknowledged by most of writers, architects and musicians, culture shifted from the monopoly of meta-narratives of writers like Marx to the fractured texts of French post-structuralist like Deleuze and Guattari.[181] While this fragmented situation provides overabundance of events and spaces and represents "complexity and indeterminacy" on the everyday life, it also changes the structure of contemporary city itself and the social environment of people. Thus, disjunctive culture creates fragmented, disintegrated, discentered, disordered and discontinues spaces that take architectural programs from the context of the contemporary city. Namely, this culture creates disjunctive cities.

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[176] Conference at USD: "Art and the Fragmentations of Urban Space: Gated Communities, Global Cities, Non-Places." [WWW, Internet], Address: http://history.sondiego.edu/news/ [Last Accessed: 07.08.2007].
[177] Jean Attali. "A Surpassing Mutation".Mutations. Barcelona: Actar, pp:20-23.
[178] Yorgos Simeoforidis. "Notes for a Cultural History between Uncertainty and the Contemporary Urban Condition" Mutations. Barcelona: Actar, pp:414-425.
[179] Bernard Tschumi. The Manhattan Transcripts. New York: Academy Editions, 1994, p. xx.
[180] Bernard Tschumi. "Introduction." Architecture and Disjunction. London: The MIT Press, 1996, p.3.
[181]Soft-Where Specifics of Site DX Raiden.[WWW, Internet], Address: www.physicsroom.org.nz/log/archieve/10/soft/ [Last Accessed: 07.08.2007].

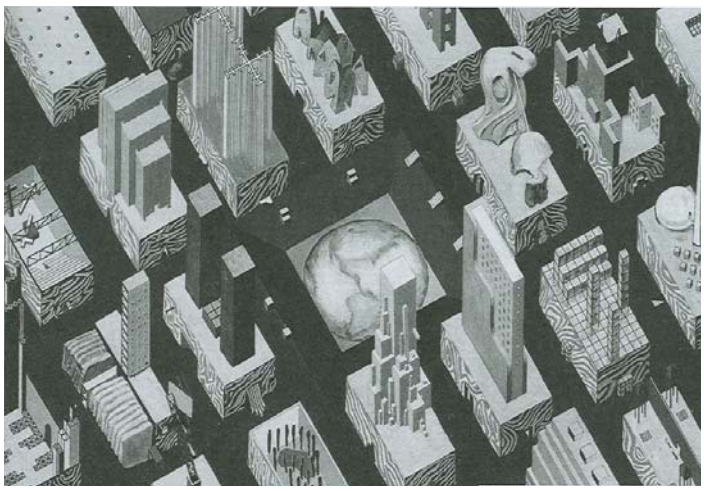

Figure 4-2 City of the Captive Globe (Project), Rem Koolhaas, 1972. (Source: Moneo, Rafael. Theoretical Anxity and Design Strategies in the Work of Eight Contemporary Architects, The MIT Press, London, England, 2004.)

Consequently, in perpetual expansion, transformations of the Supermodernity provide two different concepts defined as the generic city and the disjunctive city. While the former creates homogeneous, unified, centered contemporary cities, the latter generates fragmented and heterogeneous ones.

4.2.2 The Effects of Supermodernism on Architecture

> "A world where people are born in the clinic and die in hospital, where transit points and temporary abodes are proliferating under luxurious or inhuman conditions (hotel chains and squats, holiday clubs and refugee camps, shantytowns threatened with demolition or doomed to festering longevity); where a dense network means of transport which are also inhabited spaces is developing; where the habitué of supermarkets, slot machines and credit cards communicates wordlessly, through gestures, with an abstract, unmediated commerce, a world thus surrendered to solitary individuality…."[182]

[182] Marc Auge. Non-Places: Introduction to an Anthropology of Supermodernity., translated by John

There is a reciprocal relationship between architecture and the city. It is a two-fold process where they transform and re-shape each other.[183] Jean Attali states that they maintain relations of inverted and inseparable belonging.[184] While architecture is a background for the city, it also takes function from the city. Namely, the city is the place for confronting architecture and urban dynamics of the era.[185] As for Diana Agrest the city is the "limit of architecture"[186]. Namely, the city constitutes the repository for the architecture.[187] So, the features of contemporary cities where architecture faces with the new urban landscape get importance. In this context, generic city and disjunctive city, two different concepts of Supermodernism, provide architecture create two different spaces: "non-places" and "places".

In generic cities, since architectural programs are not restructured according to transformations on the urban fabric, there is "a crisis of architecture and urbanism"[188], which indicates the impotence of architecture in the domain of architecture.[189] Because of the absence of theory of producing space toward the instable transformations of the contemporary world, architecture responds to these changes by creating neutral global boxes with flexible frames formed by a set of quantifiable distances, areas and dimensions. Thus, it substitutes the "global" by the "context of city" and produces non-contextual spaces, which is also suitable for the capitalist mass-production system.

According to Auge, if spaces designed according to context of the cities are defined as "places", these new structures for the communication and transportation, designed according to global values, are defined as "non-places". Namely, Auge describes non-contextual spaces as non-places. For example, rapid means of transport and communication requires the accelerated circulation of passengers and goods. So, the installations like high-

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Howe, London New York : Verso, 1995, p.56

[183] İnan, Afet Derin. A Reading on New Centres in Metropolitan Cities. Ankara: METU, 2001, pp: 1-2.

[184] Özlem Mutlu. Understanding City as an Architecture and Non-Architecture Program: Learning From Ankara. Ankara: METU,2006, p.1.

[185] Ibid. p:2-3.

[186] Ibid. p.15.

[187] Ibid.

[188] Rem Koolhass. " Pearl River Delta (Harvard Project on the City)". Mutations. Barcelona: Actar, p. 310.

[189] Özlem Mutlu. Understanding City as an Architecture and Non-Architecture Program: Learning From Ankara. Ankara: METU,2006, p. 4.

speed roads, railways, interchanges and airports respond this urgent request by providing enough openings and voids to get people, their movements and tools, without considering their city context. To be precise, quality of spaces is reduced into quantitive values. Thus, non-places of generic cities that are the inventions of the deficiency of the theory of designing space are created.

On the other hand, in disjunctive city consisting of decentred, unhierarchic and different fragments, architecture takes its program from the cultural context of the city. Thus, in spite of late capitalism, architecture creates organically social spaces, namely it generates "places". Also, architecture becomes dynamic like the city. The fractured structure of disjunctive cities inevitably implies regrouping of its fragments, which causes unexpected "events", variety and also vitality in the city.[190] So, architectural programs search the methods to support this vitality in order to make places.

As a result, Supermodernism affects architecture in two different concepts: non-places as the product of the generic cities and places as the product of disjunctive cities.

4.2.2.1 Non-Places

> If on arriving at Trude I had not read the city's name written in big letters, I would have thought I was landing at the same airport from which I had taken.[191]

As for Koolhaas, the method of architecture on the contemporary generic cities looks like the method of production of "PHOTOSHOP", which let us make collages of images by the ability of combining anything with anything else according to desire.[192] The analogy of "PHOTOSHOP" indicates the response of the architecture to late-capitalism: that is "strictly mechanical, reproducible without thinking" like mass production of an international company. Thus, everywhere gets more similar and more homogeneous.

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[190] Özlem Mutlu. Understanding City as an Architecture and Non-Architecture Program: Learning From Ankara. Ankara: METU,2006, p.17.
[191] Non-Places of Travel in Visual Art.[WWW, Internet],
Address: http://www.korculainfo.com/nonplaces/index.htm [Last Accessed: 07.08.2007]
[192] Rem Koolhass. " Pearl River Delta (Harvard Project on the City)". Mutations. Barcelona: Acta, 2000, p.320.

Consequently, late-capitalism substitutes the notion of context with the global, and creates non-contextual spaces, such as the repetitive buildings of McDonald's in the cities all over the world. In this respect, Saskia Sassen states "I am not sure what this tearing away of the context and its replacement with the fact of the global could mean for architecture and urbanism."[193]

Marc Auge defines non-contextual spaces as non-places, having no identity, no history and no relationship.[194] The notion of "non-places" was used firstly in 1964, in Webber's book "Non-place Urban realm" which observes whether new urban settings have still a tangible and meaningful identity and how society could be built without face to face communication. After that the notion of "non-places" have begun to be used more with the anthropologist Marc Auge's book "Non-Places: Introduction to Anthropology of Supermodernity", in 1995. According to him "non-places are spaces of transport and transit that are lacking any historical significance and strong symbolism. If a place can be defined as relational, historical and concerned with identity, then a space which can not be defined as relational, historical, or concerned with identity will be a non-place."[195]

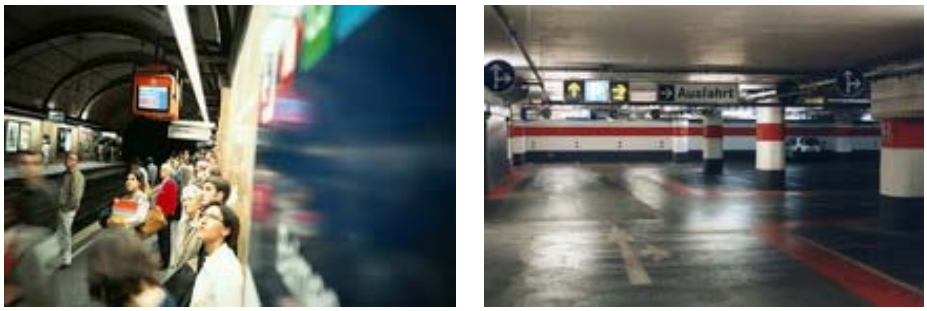

Figure 4-3 Non-places (Source :www.shiva.uniurb.it/eurex/)

Created by supermodernity, non-places are the real measure of our time, according

[193] Yorgos Simeoforidis. "Notes for a Cultural History between Uncertainty and the Contemporary Urban Condition" Mutations. Barcelona: Actar, 2000, pp: 414-425.
[194] Marc Auge. Non-Places: Introduction to an Anthropology of Supermodernity., translated by John Howe, London New York : Verso, 1995, p.78.
[195] Non Places and Metropolitan Sites. [WWW, Internet], Address: www.shiva.uniurb.it/eurex/[Last Accessed: 07.08.2007]

to Auge.[196] They are transient spaces for passage, communication and consumption like supermarkets, malls, motorway restaurants, airports, which indicates that we are forced to spend more and more time in such non-places.[197] Being passages between airside and landside, regional airport terminals show the characteristics of non-places. They are not different but also more or less the same in all countries.

Composed of the strange repetition commercial malls, airports and theme parks, the system of "non-places" turns urban space into a tableau vivant that is formal, semantic structure, which makes city sever from its public realm.[198] Even though, non-places are transient spaces for traffic, communication, there is no organically social life, like in the streets of the cities. Actually, the circulation is constructed between these areas where travelers interact only with texts like "Check-In"; "Departure Lounge"; "10 Items or Less" and share similar experiences to be alone.[199]. However, transit spaces for traffic, communication and consumption were the heart of the city and the support of social exchanges, in the early times. For instance, agora was a bazaar and also a meeting place that provides space for communication in Ancient Greek. Moreover, market days were a social occasion. But, the characteristics of these places have been reduced into individual level at the present time, which can be explained best "the fall of public man and the rise of self-observing man".[200] Namely, people have begun to live in a new form of urban solitude described by passwords, pin-numbers and card-numbers.[201] To sum up, service places of social life have disappeared by leaving their places to non-places of the "shopping" culture which are obtained by the late-capitalism on the supermodernist era.

A couple of words in the air like "airport=mall", "education=shopping", "mall=public space", "shopping>airport", "shopping=terminal human activity" represents domination of late-capitalism on the architecture.[202] Thus, shopping has become one of the

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[196] Marc Auge.. Non-Places: Introduction to an Anthropology of Supermodernity., translated by John Howe, London New York : Verso, 1995.p.56.
[197] David Harvie. Capital and Class. ProQuest Information and Learning Company.Autumn 1996.
[198] Conference at USD: "Art and the Fragmentations of Urban Space: Gated Communities, Global Cities, Non-Places." [WWW, Internet], Address: http://history.sondiego.edu/news/ [Last Accessed: 07.08.2007].
[199] Non Place. [WWW, Internet], Address: http://ace.caad.ed.ac.uk/NonPlace/ [Last Accessed: 07.08.2007].
[200] From L8 to LA: "Place and Non-Place" and the Urban Experience. [WWW, Internet], Address: www.americans.org.uk/online/place-and-non-place.htm. [Last Accessed: 08.08.2007].
[201] Ibid
[202] Rem Koolhass. "Shopping (Harvard project on the City". Mutations. Barcelona: Actar, 2000,

only means of public activity and expanded into any program like airports, train stations, schools, museums, streets, parks and squares which are designed according to mechanisms and spaces of shopping. The infrastructures of cities have begun to be organized according to the malls. In fact, in Tokyo the infrastructure of public transportation systems are designated by malls.

4.2.2.1.1 The Features of Non-Places

Non-places are anonymous spaces in which people are thought to be customers rather than human being.[203] They are means of globalization.[204] In the globalization process, the differences among geographies are not desired. Therefore, space and time are reconstituted according to capitalist economies own demands. They have become quantitive values defined by considering "size, speed and amount" which provides the neutrality and blankness of non-places.[205] They have typical plan without qualities where generally a minimal sized circulation shaft is at the center in order to create maximum void. This generic typology turns façades into envelops being abstracted from their context of the cities. In order to react the instable transformations, non-places require flexible frames, which is supplied by technological inventions. Especially together with air-conditioning and the escalator, endless interior space is attained for non-places.[206]

As a consequence, abstracted from their context of cities and composed of endless repetition of the same simple "resilient frames", self-sufficient, big empty boxes that can enlarge the direction of x, y, z axis according to new demands create non-places which act like ships for movements and flows and transform architecture into a passive agent in the city.

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pp:124-184.

[203] Veronique Albert Gamet and Bernard Cova. "Servicescapes: From Modern Non-Places to Post-Modern Common Places." Journal of Business Research, Vol 44. 1999, p: 37-44.

[204] Hakkı Yırtıcı. Çağdaş Kapitalizmin Mekansal Örgütlenmesi. İstanbul Bilgi Üniversitesi Yayınları, 2005. (translated by author)

[205] Özlem Mutlu. Understanding City as an Architecture and Non-Architecture Program: Learning From Ankara. Ankara: METU,2006, p.22.

[206] Rem Koolhass. "Shopping (Harvard Project on the City". Mutations. Barcelona: Actar, 2000, pp:124-184.

4.2.2.2 Places

> Ex-centric, dis-integrated, dis-located, dis-junctioned, deconstructed, dismantled, dissociated, discontinuous, deregulated de-, dis-, ex-. These are the prefixes of today. Not post-, neo-, or pre-.[207]

In disjunctive cities, architecture restructures its program according to context of the city and creates organically social spaces defined as places, like in the city. Thus, while program connects architecture to the city, it also causes transforming architecture in relation to structure of the city. At this point, the features of the city and how they affect architecture get importance, in order to attain the "theory of designing architecture" or rather "theory of creating places".

Our time is defined by the disjunctions. Disordered and unstable social life of contemporary world creates "culture of disjunction". [208] Such a disjunction between social values, use and forms and expected interchangeable combination of them creates constant change and indeterminism or rather dynamism in the contemporary cities. If there is a reciprocal relation between the city and the architecture, how architecture is influenced from this dynamism in the city? "Is it possible to turn something that is changing and indeterminate into a fixed project?" Actually, the answer is in the question: architectural project is not a fixed project.[209]

Architecture has become dynamic like the city in the Supermodernist era. In other words, the disjunctive culture transforms architecture into dynamic conception in opposition to static and determinate description of it.[210] So, new dynamic architecture is created and this generates the questions of what the new definition of architecture and where the limits of it. In this context, developed by Bernard Tschumi the "theory of disjunction" as a method for designing architecture in the disjunctive world, will be used to answer these questions.

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[207] Bernard Tschumi. Architecture and Disjunction., London: The MIT Press, 1996, p.225.
[208] Ibid. p:213-214.
[209] Kerem Yazgan. A Research on Bernard Tschumi's Architectural Intentions, Suggestions and Their Sources of Inspiration. Ankara: METU, 1996, p. 74.
[210] Bernard Tschumi , edited by Giovanni Damiani, Rizzoli International Publications, New York, 2003, p. 54.

4.2.2.2.1 The Theory of Disjunction: Event Architecture

Being "social interaction process", the city is a huge repository for architecture.[211] In this respect, to attain dynamic architecture, Tschumi deals with "what really happens" in the cities and also in the buildings. The fractured structure of disjunctive cities inevitably implies regroupings of its fragments. So, he focuses on organization of spaces in everyday life and searches the method of recombining of the spaces and uses. He observes that space can be used by plural, even contradictory activities.[212] "The living room can suddenly turn to an eating place or a gymnastic area." A library can be used as a banquet hall, a lecture room or may be a swimming pool. Thus, he explores that "the combination of differences" in the city causes unexpected "events", variety and also vitality. As a result, he constructs his "disjunctive theory" on the complex and pervasive combining of fragments, which provides to encourage this city vitality.[213]

Formerly, architecture was subjected to "stability, solidity and foundation" in relation to the Vitruvian Trilogy composed of form (aesthetic), function and structure.[214] Today, by taking the organic organization of spaces and "strategy of events" from everyday life, constantly unstable, or rather dynamic architecture is created. The disjunction between space and use causes the internal contradiction of architecture and endless array of uncertainties. Thus, contradictional relationship between them creates events. Tschumi explains this process as: "architecture as events against architecture as forms"[215]. For Michael Foucault, event is "the moment of erosion, collapse, questioning or problematization of the very assumptions of the setting within which a drama may take place - occasioning the chance or possibility of another, different setting" and defined as a "turning point".[216] For Derrida, events are "the emergence of disparate multiplicity" and share the roots with invention.[217] As for Tschumi, architecture is related to the events in the

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[211] Özlem Mutlu. Understanding City as an Architecture and Non-Architecture Program: Learning From Ankara. Ankara: METU, 2006, p.17.
[212] Kerem Yazgan. A Research on Bernard Tschumi's Architectural Intentions, Suggestions and Their Sources of Inspiration. Ankara: METU, 1996, p. 52.
[213] Bernard Tschumi. Architecture and Disjunction. London: The MIT Press, 1996, pp:213-214.
[214] Ibid. p.108.
[215] Bernard Tschumi , edited by Giovanni Damiani, Rizzoli International Publications, New York, 2003. p. 54.
[216] Bernard Tschumi. Architecture and Disjunction. London: The MIT Press, 1996, p.256.
[217] Ibid. p.257.

same manner the guard to the prisoner, the doctor to the patient and order to chaos.[218] In addition, architecture rejects form and function dichotomy and cause and effect relations between space and use, in order to provide events.[219] Thus, with the strategy of event, "architecture ceases to be a backdrop for actions, becoming the action itself."[220]

According to disjunctive theory; space, movement and event are the independent fragments of architecture and they are combined according to new relations which makes architecture a "combinative art" or "play of permutation"[221] They are combined by rejecting synthesis or totality. On the other hand, this regrouping suggests maintaining the contradictions in a dynamic manner by making new and unforeseen, even surrealistically absurd sets of combinations, which can be explained best by the following manifesto "the football player skates on the battlefield."[222]

As a result, the disjunction between space, events and movements, in other words; interchangeable relations between them, create new dynamic architecture. Thus, like city, architecture has become "the art of designing combination", which generates events.[223]

4.2.2.2.2 Architectural Sequence: Montage or Mixing

The relations between space, events and movements are not random. On the contrary, they present a particular organization by "architectural sequence" which contains complex series of relations between spaces, events and movements.[224] Architectural sequence is not semantic, syntactic or formal. Instead the method of it looks like montage and mixing techniques in the cinema. Both of the sequences in architecture and cinema consist of frames that are combined with devices like repetition, inversion, substitution and etc. Each frame has its own combinative structure and inherent set of rules which provides that every frame of sequence "qualifies, reinforces or alters" the other ones that precede and follow it.

This analogy between architecture and cinema is initially explored in the theoretical work of Tschumi, "The Manhattan Transcripts" where the transcription of events and

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[218] Ibid. p.127.
[219] Ibid. pp:255-259.
[220] Ibid. p. 149.
[221] Ibid. p.180.
[222] Ibid. p.182.
[223] Bernard Tschumi. The Manhattan Transcripts, New York: Academy Editions,1994, p. xxv.
[224] Ibid. p. xxiv.

buildings are tried to assay by techniques in the film. In this work, Tschumi superposes three parallel sequences of space, event and movements. While these sequences set horizontal, internal relation, they also create vertical, external relations. In addition, these relations can be compatible like "the skater skates on the skating rink"; and also they can be incompatible like "the quarterback tangoes on the skatig rink".[225] For example in the fourth episode of Manhattan Transcripts (MT4), there are five inner courtyards of a simple city block and five programs: acrobats, ice-skaters, dancers, soldiers, and football players. MT4 begins with continuous and logical relation between space, event and movement as in Figure 4-4, at the end they are superposed. In other words, deconstructed frames of sequences are reconstructed along different axes. (Figure 4-5 and 4-6). As a result, with the help of Manhattan Transcripts, Tschumi explains the complex relationships between space, event and movement and also he explores the method of combination of different frames: "to deconstruct and then to reconstruct by devices".[226] Thus, he constitutes the structure of architectural sequence.

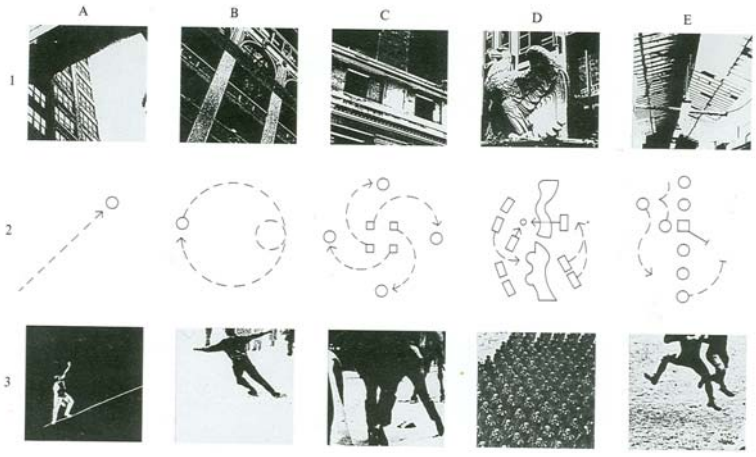

Figure 4-4 Extract from MT, The Block, Manhattan Transcripts, Bernard Tschumi. (Source: Tschumi, Bernard. The Manhattan Transcripts, Academy Editions, NY, 1994)

[225] Ibid. p.11.
[226] Bernard Tschumi. Architecture and Disjunction. London: The MIT Press, 1996, pp: 185-186.

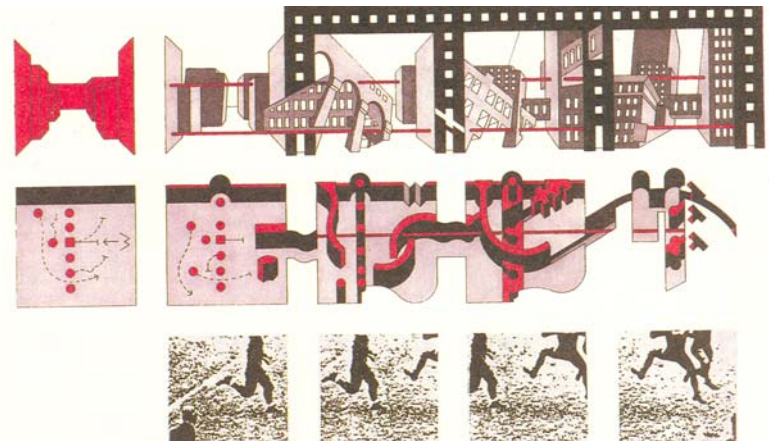

Figure 4-5 Extract from MT, The Block, Manhattan Transcripts, Bernard Tschumi.

Figure 4-6 Extract from MT, The Block, Manhattan Transcripts, Bernard Tschumi. (Source: Tschumi, Bernard. The Manhattan Transcripts, Academy Editions, NY, 1994)

As for Tschumi, architectural sequence incorporates three relations: transformational sequence, spatial sequence and programmatic sequence.[227] The first one is related to the process of work and suggests an analogy of montage and mixing techniques in film.[228] Each frame connects the other with the devices like compression, rotation, insertion, multiplication, fusion, repetition, inversion, substitution, distortion, and

[227] Bernard Tschumi. The Manhattan Transcripts, New York: Academy Editions,1994, p. xxiv.
[228] Bernard Tschumi. Architecture and Disjunction. London: The MIT Press, 1996, p.218.

superposition. Defined as transformational tools, these devices allow endless possibilities of manipulation of the sequence and can be applied every spaces, events and movements independently. The second relation is "spatial sequence" in which spaces are arranged along a planned pathway and linked with each other by the movements of bodies. As the last one, it is related to program. The sequence of events, which is characterized by social and useful concerns, constitutes a "program".

"Programmatic sequence" is superimposed on the rigid "spatial sequence", which distinguishes program into three categories: programs are indifferent to the spatial sequence, or they reinforce it, or work against it.[229] In this perspective, the connection between them is defined by indifference, reciprocity and conflict. When space and events are different logics, the relation between them is defined to be indifference like the exhibition halls of 19th century where the space accommodated different subjects from its concept. If there is mutual action and correspondence among them, architectural space and its use become interdependent where every fragment causes the other's existence. So, architects device according to user's needs like kitchen installation of the 20th century Werkbund. "You can sleep in your kitchen." Finally, the relationship can be more complex and can create powerful transgressions, which is defined as contradiction between them expressed as the following. "The battalion skates on the tightrope".[230]

As for Tschumi, the literary narrative suggests in parallel to the architectural program. In this perspective, if the writers could operate the structure of narratives such as they distort vocabulary and grammar, architects could do the same things when they organize the program. Namely, the devices, which are used for twisting the wall, like repetition, distortion or juxtaposition can be applied for the elements of programs.

Theoretical sequences of Manhattan Transcripts are transformed into practical ones in New National Theatre and Opera House Project. "How to deconstruct opera and architecture so as to think their concepts in the most precise manner can be possible and simultaneously, to observe them from an external, detached point of view?"[231] Breaking apart the conventional programmatic elements of the theatre and opera house such as stages, halls and auditoriums, Tshumi creates "a new tonality or sound" in his proposal for New National Theatre and Opera House (Figure 4-7). In this project, each and every logic

[229] Ibid. p.162.
[230] Ibid. p.160.
[231] Bernard Tschumi. Event Cities. London, England: The MIT Press, 1994, p.269.

of components are deconstructed and then juxtaposed by different parallel lines where the horizontal and vertical relationships are generated, like Manhattan Transcripts.[232]

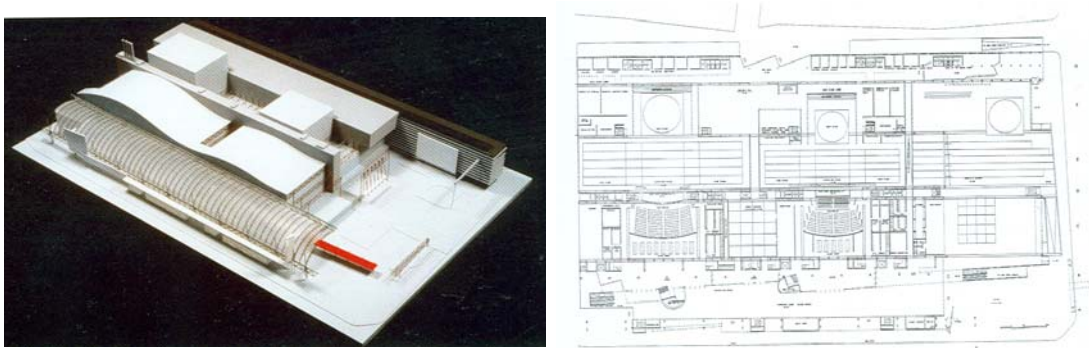

Figure 4-7 New National Theatre and Opera House, Tokyo, Japan, 1986 Bernard Tschumi (Source: Bernard Tschumi , edited by Giovanni Damiani, Rizzoli International Publications, New York, 2003)

4.2.2.3 Architecture of Regional Airport Terminals

Airports to be the vital point on the global network are the archetypal non-places.[233] Being service places for large numbers of pedestrians and luggage among two modes of transportation, they show the characteristics of other non-places. Actually, non-places to be the passages of traffic, communication and consumption, are appropriate for designing new kinds of social relations and activities and their experience can be enhanced by new ways of design methods. In fact, it is an issue of reintroducing intersections, recesses and corners, which ensures events, incidents to make people get together.[234] For example, a metro station can be very socially oriented by designing places for public events, education, information, public services, and citizenship by serving thousands of people at a time.That's to say, the problem is concerned with designing architectural program, which connects architecture to its context: the city.

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[232] Ibid
[233] From L8 to LA: "Place and Non-Place" and the Urban Experience. [WWW, Internet], Address: www.americans.org.uk/online/place-and-non-place.htm. [Last Accessed: 08.08.2007].
[234] Andrea Zalewski. "Providing for Architectural Event in Brasilia." [WWW, Internet], Address: http://www.hamercenter.psu.edu/gallery/project_2_index.htm [Last Accessed: 05.07.2007].

CHAPTER 5

DESIGNING THE PROGRAM OF REGIONAL AIRPORT TERMINAL: KÜTAHYA-AFYONKARAHİSAR-UŞAK

5.1 GENERAL VIEW

Through the program of Kütahya-Afyonkarahisar-Uşak Regional Airport Terminal which is on the agenda of DLHİ, this chapter investigates how architectural program is designed, in relation to "disjunction theory". In this manner, firstly the theory of architectural program in disjunctive world will be defined and then, the methodology of designing program will be attained. Finally, the process for designing program will be applied for Kütahya-Afyonkarahisar-Uşak Regional Airport Terminal Program.

5.2 THE THEORY OF ARCHITECTURAL PROGRAM IN DISJUNCTIVE WORLD

5.2.1 The General Notion of Architectural Program

The notion of program is defined as "a descriptive notice issued beforehand, any formal series of proceedings, and a list of the items or numbers of a concert, in the order of performance, the performance as a whole" according to Oxford English Dictionary.[235] As for the architectural program, Diana Agrest defines it as junction points between the city

[235]Bernard Tschumi. Architecture and Disjunction. London: The MIT Press, 1996, p.113.

and architecture.[236] Namely, it is a tool for connecting architecture to the city. So, it should be restructured according to transformations on the city.

In the 19th century, with the effects of growing industrialization and urbanization, new architectural programs were created and reflected the commerce and industry with the ideal buildings type by rejecting the disjunction between form and function. As for the 20th century, the modernist motto "form follows function" affected the programmatic concerns and "architecture was reduced to simple linguistic components.[237] Finally, in the 21st century, as the opinion of what happens in spaces, in other words, events get importance; the idea of architectural program has begun to be researched. The dynamic and indeterminate conception of architecture has become against the static, determined and reductionist type of it. In other words, that "architecture as events" has posed against "architecture as form".[238] The main philosophy of architecture has become as "deconstruct and then reconstruct", which made architecture a hybrid art consisting of combination of differences.[239] Accordingly, the static and determinate meaning and features of architectural program have been changed.

5.2.2 The Theory of Architectural Program in "Disjunctive World"

> There is no space without event, no architecture without program.[240]

According to disjunction theory, combination of events creates architectural program, which causes the dilemma of architecture.[241] While events are indeterminate set of unexpected results, program is determinate set of expected happenings. So, how indeterminate events provide determinate program or opposite, how the architectural program creates events? In this context, the features of architectural program in disjunctive

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[236] Özlem Mutlu. Understanding City as an Architecture and Non-Architecture Program: Learning From Ankara. Ankara: METU,2006, p.17.
[237] Bernard Tschumi. Architecture and Disjunction. London: The MIT Press, 1996, pp:113-115.
[238] Bernard Tschumi, edited by Giovanni Damiani, New York. Rizzoli International Publications, 2003, p.54.
[239] Bernard Tschumi. Architecture and Disjunction. London: The MIT Press, 1996, pp:181-189.
[240] Ibid. p.3.
[241] Ibid. pp:126-135.

world -flexibility, catalyst and multi-programming- respond this dilemma.

5.2.2.1 Flexibility

As for Tschumi, program integrates architecture to the context of the city. Therefore, the character of "organized disorder of the cities"[242] can be a source to understand the relation between events and program. Like Tschumi, Rem Koolhaas takes the contemporary city as a model and works like a realist painter. As for him, program must be more diffuse and less directly in order to foster the construction of imprecise open buildings.[243] He sums up this with statements like "a maximum of program and a minimum of architecture" and "Where there is nothing, everything is possible. Where there is architecture, nothing (else) is possible". In other words, he claims that flexible program allows the liberty of actions and this is provided by "open systems". Umberto Eco defines open system as a method inviting reader to construct the work, which makes the reader, the "producer of the text" in opposition to the global process making the reader, the consumer.[244]

However, this flexibility should not be confused with creating big empty boxes having no program, which reduces the architecture "to design shell"[245]. On the contrary, this flexibility notion requires "the interactional and accelerative capacity of the space", in order to give the user the possibility of "creative participation to their living spaces". [246] While this provides a "deeper human contact" and a "richer interaction", it also causes potential of creating "events".[247] Namely, there is a flexible program created before by an architect and this program leads people to perform freely and to develop it according to their needs and desires. Really, the program should give the clues of these interactions, which is attained by the determinant feature of the program. As a result, indeterminate

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[242] Özlem Mutlu. Understanding City as an Architecture and Non-Architecture Program: Learning From Ankara. Ankara: METU,2006, p.17.
[243] Rafael Moneo. Theoretical Anxity and Design Strategies in the Work of Eight Contemporary Architects, London, England: The MIT Press, 2004, pp: 308-359.
[244] Kerem Yazgan. A Research on Bernard Tschumi's Architectural Intentions, Suggestions and Their Sources of Inspiration. Ankara: METU, 1996, p.75.
[245] Ibid
[246] Ibid. p.76.
[247] Ibid.

events are created by flexible determinant programs.

5.2.2.2 Catalyst

As for Tschumi, if architecture is "the creation of relations" between space, event and movement, "the architect first is a formulator and an inventor of relations". [248] That's to say, while designing a program, future relations and transformations should be examined, which is explained as "the design of conditions". Tschumi proposes, as a method, to search for revealing the "inner contradictions" of the program that is the dialectical understanding to realize the analyzed problem better.[249] To him, due to that contradictions are useful design tools, they should not be disregarded. Like in the cities, revealing hidden potentialities or contradictions in a program and using them for appropriate spatial configuration may create conditions for uncommon or unpredictable events.[250] Consequently, the conditions that have potential to create events are determined by the program, or rather program is catalyst that gets events into action. Thomas Hanrahan explains this feature of program by the following: "Prompted by a program of a single word or theme, a body of rigorous ideas and analysis are projected into the work."[251]

5.2.2.3 Multi-Programming

For Tschumi, architecture in the 21st century lies in the construction of "events".[252] One of the methods of creating these events is "programmatic collisions".[253] Interrelations between diverse programs, namely multi-programs, allow events to occur. Combination of

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[248] Bernard Tschumi. Architecture and Disjunction. London: The MIT Press, 1996, p.181.
[249] Kerem Yazgan. A Research on Bernard Tschumi's Architectural Intentions, Suggestions and Their Sources of Inspiration. Ankara: METU, 1996, p.103.
[250] Andrea Zalewski. "Providing for Architectural Event in Brasilia." [WWW, Internet], Address: http://www.hamercenter.psu.edu/gallery/project_2_index.htm [Last Accessed: 05.07.2007].
[251] Index Architecture: A Columbia Book of Architecture, edited by Bernard Tschumi and Matthew Berman; assisted by Jane Kim. Cambridge, Mass: MIT Press, 2003.
[252] Bernard Tschumi. Architecture and Disjunction. London: The MIT Press, 1996, p.256.
[253] Andrea Zalewski. "Providing for Architectural Event in Brasilia." [WWW, Internet], Address: http://www.hamercenter.psu.edu/gallery/project_2_index.htm [Last Accessed: 05.07.2007].

programs or rather multi-programs, integrate different programmatic elements into a continuous system, which creates the transference points or reassembly units of disjunctive culture.[254] Also, as they are defined as "in-between" spaces, these points are the places for the communication and integration of disparate programs, where unexpected events might occur and dynamism of the program might be attained. In proposal for Centre for Art and Media, at the centre of the building, the linear core is constructed in order to suggest a public space for interchange and communication. (Figure 5-1)

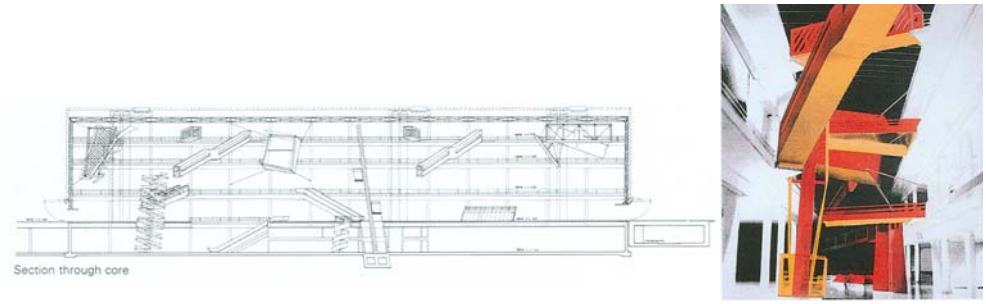

Figure 5-1 Centre for Art and Media (ZKM),Karlsruhe, Germany, 1989,Bernard Tshumi (Source: Bernard Tschumi , edited by Giovanni Damiani, Rizzoli International Publications, New York, 2003)

In addition, architecture finds its meaning with its multi-programming which may constitute new "communal relations" and also new definitions.[255] Like the high-rise buildings in New York and, Tokyo where multiple programs - department store, a museum, a health club and a railway station - are scattered throughout the floors, the program should be urban that is defined by intense multiplicity of heterogeneous activities. Namely, architecture should be "microcosm of the city itself"[256] which makes it as "generator" where new social relations and new meanings are created.

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[254] Bernard Tschumi. Architecture and Disjunction. London: The MIT Press, 1996, p.178-180.
[255] Kerem Yazgan. A Research on Bernard Tschumi's Architectural Intentions, Suggestions and Their Sources of Inspiration. Ankara: METU, 1996, pp:103-106.
[256] Bernard Tschumi. Event Cities 3: Concept vs. Context vs. Content. Cambridge, Mass.: The MIT Press, 2004.

In the proposal for Kansai International Airport of Tschumi, airport is seen as the generator of the ultimate linear city. "Our ambition for Kansai International is not only to address travellers but also to act as a new urban segment for culture and recreation, superstores and great hotels."[257] In this respect, the proposal is divided into two parts: the linear city and the deck. Comprising three parallel lines-the double strip, the wave and the slab-the linear city is constituted by parallel disjunctions. While the double strip involves airport transfer functions, the slab contains two hotels with 1000 rooms and hourly rental office spaces and a mile-long wave includes entertainment, cultural and sports centres together with cinemas, exhibition spaces, swimming pools, golf courses, shooting galleries and so forth. Thus, the relationships between the linear bands comprised of disparate programmatic elements, force a continuous sequence of events, which gives new definition to architecture. (Figure 5-2)

In addition, Koolhaas is influenced by space and event relation in the skyscrapers like Tschumi, which will be explained his description of the Downtown Athletic Club in New York: "Eating oysters with boxing gloves, naked, on the ninth floor."[258] His reading of the contemporary city provides him to invent the conception of "free section" through which he establishes the multi-programs and design of buildings. Rafael Moneo, defines his architecture as "cocktail architecture" due to that many flavors of a cocktail combined together.[259](Figure 5-3)

In the Block 6 in Netherlands, by "modifying the superposition of floors in the typical American high-rise" and using the concept of free section, Koolhaas superposes ten cinemas, restaurant, mega store and supermarket and creates the void and mass system. While the mass contains the program, the void becomes the transference unit between different programs, which creates the identity of building.[260] Thus, the meaning of building derives from its organization of multi-programs. (Figure 5-4)

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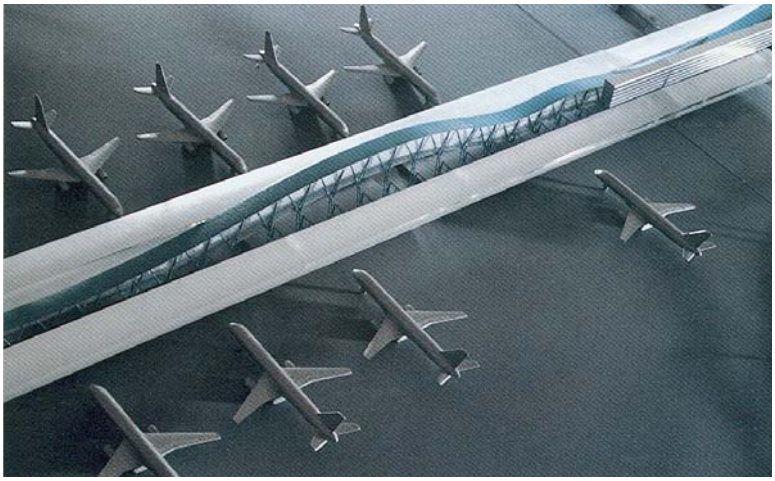
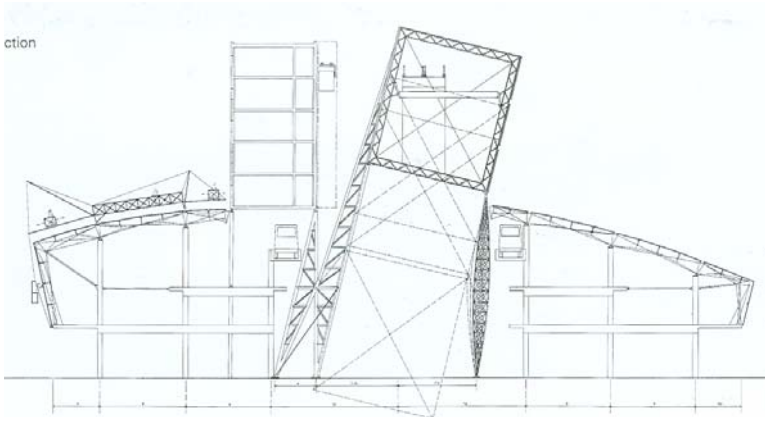
[257] Bernard Tschumi , edited by Giovanni Damiani, New York: Rizzoli International Publications 2003, p. 64.
[258] Bernard Tschumi. Architecture and Disjunction. London: The MIT Press, 1996, p.256.
[259] Rafael Moneo. Theoretical Anxity and Design Strategies in the Work of Eight Contemporary Architects, London, England: The MIT Press, 2004, p.314.
[260] T. Noriko. OMA@work.a+u. Tokyo : Ē ando Yū, 2000. pp:84-104.



(a)



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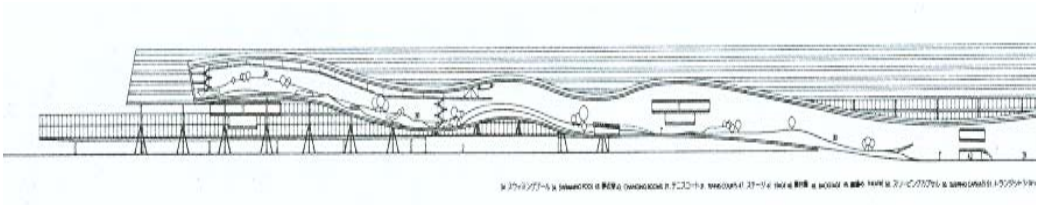

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Figure 5-2 Kansai International Airport, Kansai, Japan, 1988, Bernard Tschumi (Source: Bernard Tschumi , edited by Giovanni Damiani, Rizzoli International Publications, New York, 2003)

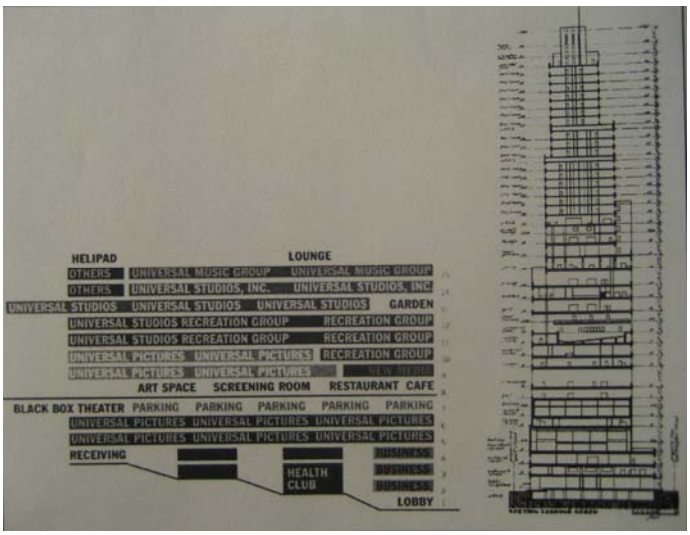

Figure 5-3 Universal HQ, Rem Koolhaas, and Section of Downtown Athletic Club (Source: Özlem Mutlu. Understanding City as an Architecture and Non-Architecture Program: Learning From Ankara. Ankara: METU,2006)

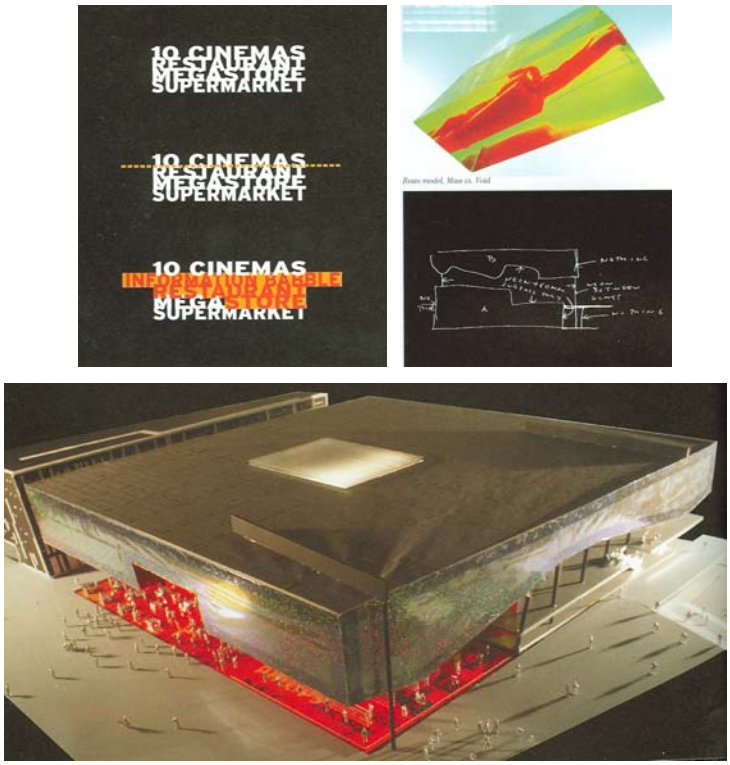

Figure 5-4 The Block 6 in Netherlands, Rem Koolhaas (Source: Noriko, T., OMA@work.a+u. Tokyo : Ē ando Yū, 2000.)

As a result, three main features of architectural program of disjunctive world- flexibility, catalyst and multi-programming- make program create indeterminate events. Thus, determined, static conception of architectural program is transformed into dynamic indeterminate one. As pretext of architectural design, program becomes "act to edit function and human activities".[261] For Koolhaas, program is "the engine of a project that drives the logic of form and organization". In other words, it is the main tool for generating dynamic architecture of today. When it is superposed to spatial configuration, it provides places that are organically social spaces like in the dynamic contemporary cities.

5.2.3 The Relations between Program and Space

Being a tool for designing architecture, program is superposed into spatial sequence, by three different ways: "crossprogramming, transprogramming and disprogramming"[262], which have become the devices of combination of program and space.

Crossprogramming: Non proposed programs are applied to the given space, e.g. "using a church building for bowling."[263]

Transprogramming: Programs together with their spaces are combined regardless of their incompatibles. e.g. library with running track.

Disprogramming: Programs which require different spatial configurations are combined all together. Namely, disprogramming is defined as "designation of contradictions of a program, and producing new solutions from these contradictions"[264].

Andrea Zalewski, proposes a multi-program for non-operational subterranean metro station beneath Lucio Costa's Pilot Plan of Brasilia for her Architecture Design Thesis. She combines the program of metro with language school and public lecture hall, internet facilities, an international cuisine strip, a recreational/leisure swimming pool, a music club and bar, and parking. Thus, by using crossprogramming the typology of the metro is challenged and also architectural event is created. (Figures 5-5 and 5-6)

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[261] Index Architecture: A Columbia Book of Architecture, edited by Bernard Tschumi and Matthew Berman; assisted by Jane Kim. Cambridge, Mass: MIT Press, 2003.
[262] Bernard Tschumi. Architecture and Disjunction. London: The MIT Press, 1996, p.205.
[263] Ibid.
[264] Ibid.

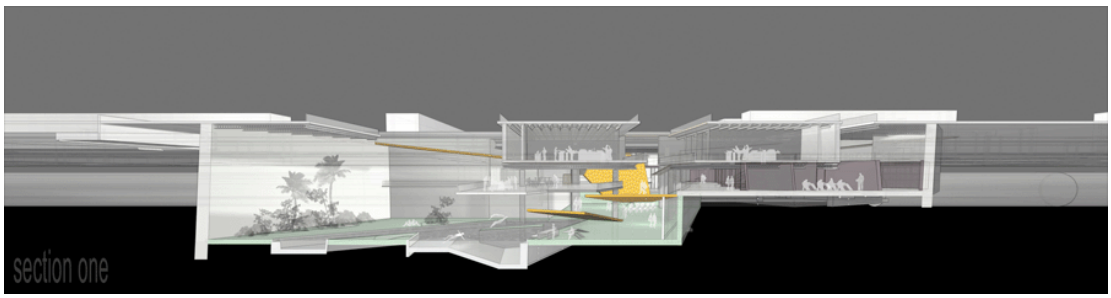

Figure 5-5 Section of the non-operational subterranean metro station beneath Lucio Costa's Pilot Plan of Brasilia, Andrea Zalewski.

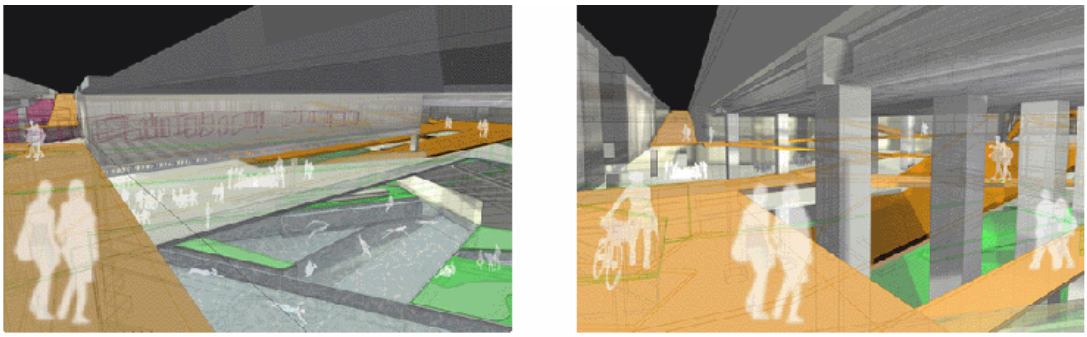

Figure 5-6 Crossprogramming in the non-operational subterranean metro station beneath Lucio Costa's Pilot Plan of Brasilia, Andrea Zalewski.
(Source: http://www.hamercenter.psu.edu/gallery/project_2_index.htm)

In the proposal for National Library of France, Tschumi combines "the pursuit of modernity and the pursuit of knowledge, the athlete and the scholar".[265] In order to break the historical static concept of libraries, a running track is combined with the forum and the reading room of the library, which transforms library from a frozen monument to an "event".[266] (Figure5-7) He suggests disjunctive architectural sequence by bringing together seemingly incompatible events and spaces. Actually, for Yazgan, they are compatible events. You can go library after run in the university's running track. In other words, the program of the National Library of France carries "everydayness and a potential for a new

[265] Bernard Tschumi , edited by Giovanni Damiani, New York: Rizzoli International Publications, 2003, p. 60.
[266] Ibid.

social activity".[267]

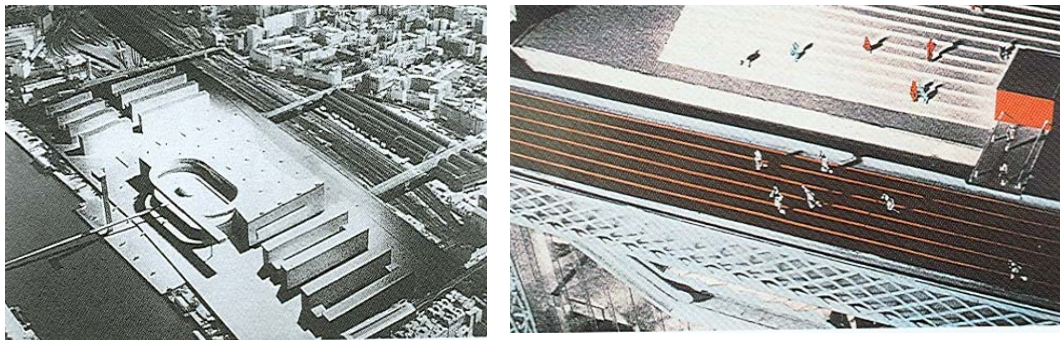

Figure 5-7 National Library of France, Paris, France, 1989, Bernard Tschumi (Source: Bernard Tschumi , edited by Giovanni Damiani, Rizzoli International Publications, New York, 2003)

The initial point of the proposal of Kyoto Centre and Railway Station is to combine railway station with the programs of cultural centre, hotel, convention centre and department store, namely to create hybrid mega project. In this concept, firstly the elements of programs are decomposed and then they are aligned to the blocks. Next, the eventual functions generating events in combination are extracted from the program. Thus, "image theatre, sky lounge, wedding chapel, athletic club, amusement arcade, gourmet market and historical museum" are combined in the skyframe where a horizontal slab and seven vertical slabs intersect. In this way, "an unprecented combination of programs and spaces" and "a multiplicity of events" are created by using the disprogramming tool.[268] (Figure5-8)

[267] Kerem Yazgan. A Research on Bernard Tschumi's Architectural Intentions, Suggestions and Their Sources of Inspiration. Ankara: METU, 1996, p.52.
[268] Bernard Tschumi. Event Cities. London, England: The MIT Press, 1994, pp: 223-225.

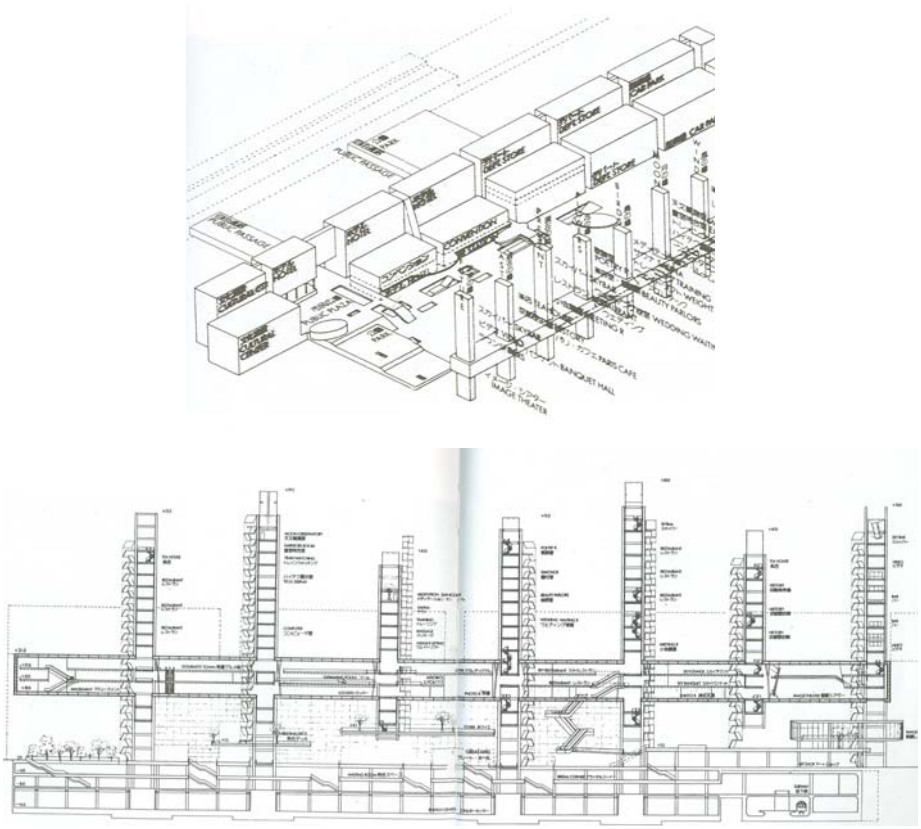

Figure 5-8 Kyoto Centre and Railway Station, 1991, Bernard Tschumi (Tschumi, Bernard. Event Cities , The MIT Press, London, England, 1994.)

5.3 THE METHOD OF DESIGNING ARCHITECTURAL PROGRAM IN THE DISJUNCTIVE WORLD

Being a main tool for making architecture, program is restructured according to transformations on the city. In this respect, "to deconstruct and then to reconstruct the program" is the main strategy of designing program in the disjunctive world. For Tschumi, "creating new programmatic relations and reinterpretation of the architectural program" is the key policy in order to design program.[269]

At this point, firstly, the universal meaning of the initial program is analyzed in

[269] Kerem Yazgan. A Research on Bernard Tschumi's Architectural Intentions, Suggestions and Their Sources of Inspiration. Ankara: METU, 1996, p.103.

order to realize which functions it contains. Then in order to combine with the initial program, other programs are questioned, according to dynamics of the city. While these new programs create new social relations and redefine the meaning of the given program, they also make architecture a generator. Then the whole program is analysed, dismantled and deconstructed. Thus, the ubiquitous psyche between program and space is destroyed. Next, all of the elements of programs are analyzed in order to reveal inner contradictions between them. Finally, by using the devices like compression, "rotation, insertion, multiplication, fusion, repetition, inversion, substitution, distortion, and superposition"[270], the elements of programs are organized. Namely, a new program is reconstructed.

Consequently, the flexible, catalyst and multi-program of disjunctive world wants to create events and new social activities, while combining different elements of programs. So, it attempts to dislocate and deregulate meaning of traditional programs. Namely, it deconstructs given programs in order to reconstruct them in a new programmatic approach. So, the method for designing architectural program in disjunctive world is summarized like:

1- Analyzing the universal meaning of given program,
2- Questioning other programs with respect to city dynamics,
3- Deconstructing the whole program,
4- Analyzing the elements of programs,
5- Reconstructing a new program.

In this context, being a model for 21st century architectural programs, the Parc de La Villette Project and Seattle Public Library will be explained in order to describe this methodology.

[270] Bernard Tschumi. Architecture and Disjunction. London: The MIT Press, 1996, p.154.

5.3.1 **Parc de La Villette** (Paris-France, 1982-1997)

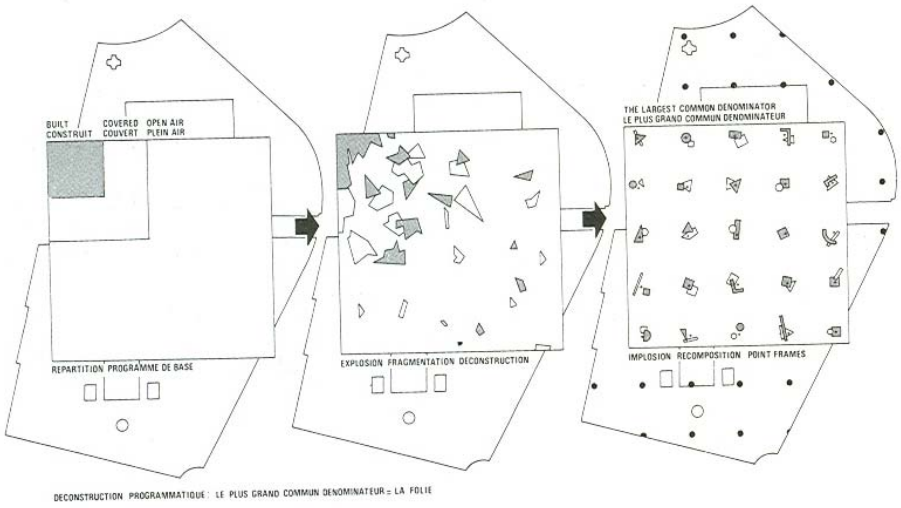

Figure 5-9 Deconstruction and Reconstruction of the program of Parc de La Villette, Paris, Bernard Tschumi. (Source: Tschumi, Bernard. Architecture and Disjunction, The MIT Press, London, England,1996.)

Instead of a simple replica of landscape, which is the universal meaning of the park, Tschumi designs the Parc de La Villette as "Urban Park for the 21st century". [271] In this respect, he combines and juxtaposes a variety of programs for workshops, gymnasium, bath facilities, playgrounds, exhibitions, concerts, scientific experiments, games and competitions. In terms of methodology, firstly universal program of the park is deconstructed. Then, different functions are isolated and then distributed on the site to an intermediary space of folies in order to support especially the combination of incompatible programs. (Figure 5.9) The grid of folies permits the combination of places of transference on the background of the La Villette, by reinforcing the transference fragments and restructuring on new bases. (Figure 5.10)

[271] Ibid. pp:172-189.

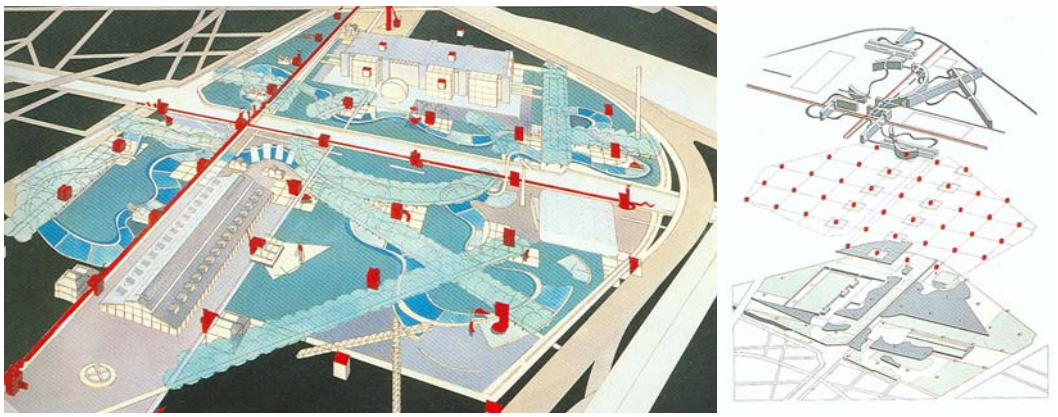

Figure 5-10 Parc de La Villette, Paris, France, 1982-1997, Bernard Tschumi (Source: Bernard Tschumi , edited by Giovanni Damiani, Rizzoli International Publications, New York, 2003)

5.3.2 Seattle Public Library, Seattle, Washington, USA 2003

In the Seattle Public Library, Koolhaas reinvents the notion of library. He transforms library from a space to read into a social centre with multiple responsibilities, by redefining use, rededicating compartments to new programs. The explosive multiplication of information media and social obligations in the new library cause the vast proliferation and increadible intricacy of the program. Firstly, he analyzes the elements of the program, then deconstructs them. Next, he reconstructs the program according to functions of elements. Program includes parking, store, assembly, books and headquarters. (Figure 5.11) Also, between these programs, new programs are created like kids, living room, mixing chamber and reading room. (Figures 5-12 and 5-13) Thus, the new Seattle Public Library has become a new definition of library, of culture, of Seattle.[272]

[272] T. Noriko. OMA@work.a+u. Tokyo : Ē ando Yū, 2000, pp: 90-104.

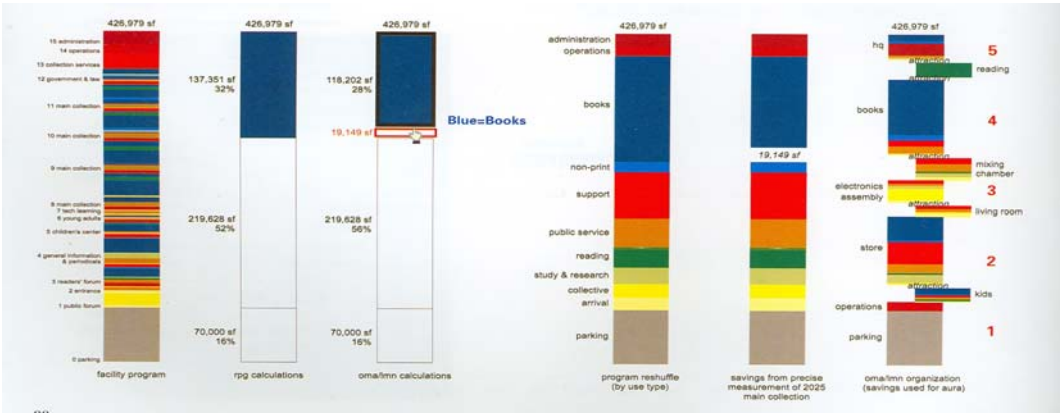

Figure 5-11 Reconstructing the Program of the Seattle Public Library, Rem Koolhaas.

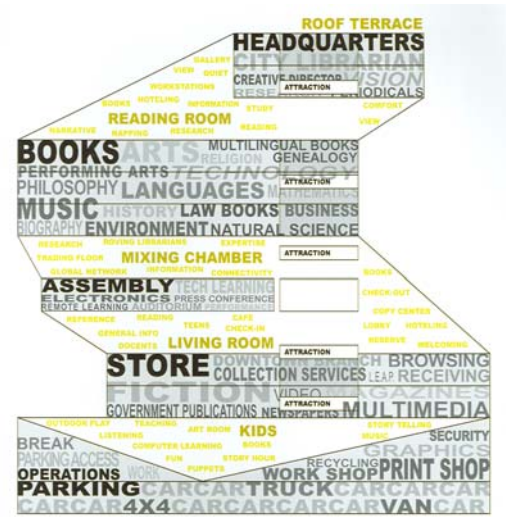

Figure 5-12 Program of the the new Seattle Public Library, Rem Koolhaas.

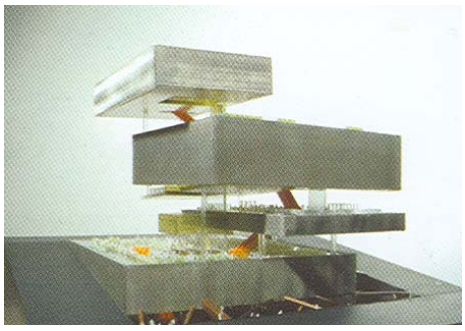

Figure 5-13 The new Seattle Public Library, Rem Koolhaas. (Source: Noriko, T., OMA@work.a+u. Tokyo : Ē ando Yū, 2000.)

5.4 THE PROCESS OF DESIGNING ARCHITECTURAL PROGRAM OF KÜTAHYA-AFYONKARAHISAR-UŞAK REGIONAL AIRPORT

In this part of the thesis the method for designing architectural program in disjunctive world will be applied to the Kütahya-Afyonkarahisar-Uşak Regional Airport Terminal. In this respect, firstly the universal program of regional airport terminals will be analyzed. Then dynamics of the region will be researched in order to attain other programs needed by the region. Thirdly together with new programs, the whole program of regional airport will be deconstructed. Next, the elements of programs will be analyzed in order to combine them. Finally, by combining these elements new program of Kütahya-Afyonkarahisar-Uşak Regional Airport Terminal will be reconstructed.

5.4.1 Analyzing the Universal Program of Regional Airport Terminals

In order to analyze the universal program of regional airport terminal, firstly the questions of "what happens in the building?", "what is the elements of program?" and "who use the terminal?"should be answered.

Being interface between landside and airside, the terminal consists of mainly movement systems among the entrance and the aircraft.[273] Operating on parallel routes, passenger and baggage flows shape the movements along the terminal by taking apart at ticket check-in and then progressing through a series of controls and at last coming together at baggage claim area at the end of the journey.[274] Taking into consideration of these movements, departures and arrivals, activities in opposing currents form the two essential functions in the organization of terminal. These main functions constitute two main public spaces: departures concourse and arrival concourse.

The departure concourse involves:

- "circulation areas
- waiting areas, including departure lounge

[273] Brian Edward. The Modern Airport Terminal. London, New York : Spon Press, 2005, p: 136-137.
[274] Ibid.

- shops, bars and restaurants
- telephones and business facilities
- information points
- toilets, restrooms and baggage check-in
- immigration control."

The arrivals concourse contains:

- "circulation areas
- waiting areas including arrivals lounge
- limited shops and bars
- telephones and toilets
- baggage claim
- customs, health and immigration control."[275]

These two main public elements of program absolutely perform the interconnected four functions of the terminal: "changing of transport mode, processing passengers, passenger services and organization of movements".[276] (Table 5-1) In order to integrate regional airports with the public transportation system, the terminal provides accommodation for changing of transport mode from train to plane or from car to plain. The processing of passengers comprises the controlling systems of airlines and the government. While ticket check-in, baggage handling and gate check-in are carried out by airline staff; health, passport, immigration and passport controls and security checks are performed by government officials in a tighter manner due to international terrorism, diseases and drug traffic. As for passenger services, with the effects of commercial pressures and globalism, they are largely about retailing such as shops including duty-free, restaurants, bars, banks, car rental and post offices, situated on the route of passenger movements. Namely, terminals are established as merchandising centres.[277] With regard to organization of movements, the terminal should orient passengers according to functional segregation of arriving and departing flows. For this, different circulation and gathering

[275] Ibid. pp:13-157.
[276] Ibid.
[277] CJ Blow. Airport Terminals. Second edition, Great Britain: MAC London RIBA Architectural Press, 1996, p: 163-165.

spaces are created like general concourse, departure, arrivals and gate lounges, airside corridor, piers and baggage reclaim areas which are supplied by cafes, bars and shops and used for diversity of purposes such as "processing, gathering, servicing passenger needs, batching of passengers into flight grouping".[278] (Figure 5-14)

Table 5-1 Elements of Regional Airport Terminal
(Source: Brian Edward. The Modern Airport Terminal. London, NY : Spon Press, 2005)

Elements of program:	Function:	Main function:
Circulation areas	Organizing movements Changing transport	Departure/Arrivals
General concourse, assembly or entrance	Organizing movements	Departure/Arrivals
Departing lounge	Organizing movements	Departure
Shops, bars and restaurants	Passenger Services	Departure/Arrivals
Telephones, information points, car rental	Passenger Services	Departure/Arrivals
Toilets, restrooms and first-aid	Passenger Services	Departure/Arrivals
Ticket sales	Passenger Services	Departure
Check-in and baggage handling	Processing Passengers	Departure
Transit lounge	Organizing movements	Departure/Arrivals
Immigration control	Processing Passengers	Departure
Airside corridor, piers and loading bridges	Organizing movements	Departure/Arrivals
Arrivals lounge	Organizing movements	Arrivals
Baggage claim	Organizing movements	Arrivals
Customs, health and immigration control	Processing Passengers	Arrivals
Security	Secondary function	Departure/Arrivals
Airport offices, airline offices	Secondary function	Departure/Arrivals
Customs, immigration and health offices	Secondary function	Arrivals
Baggage sorting area	Secondary function	Departure/Arrivals

[278] Ibid.

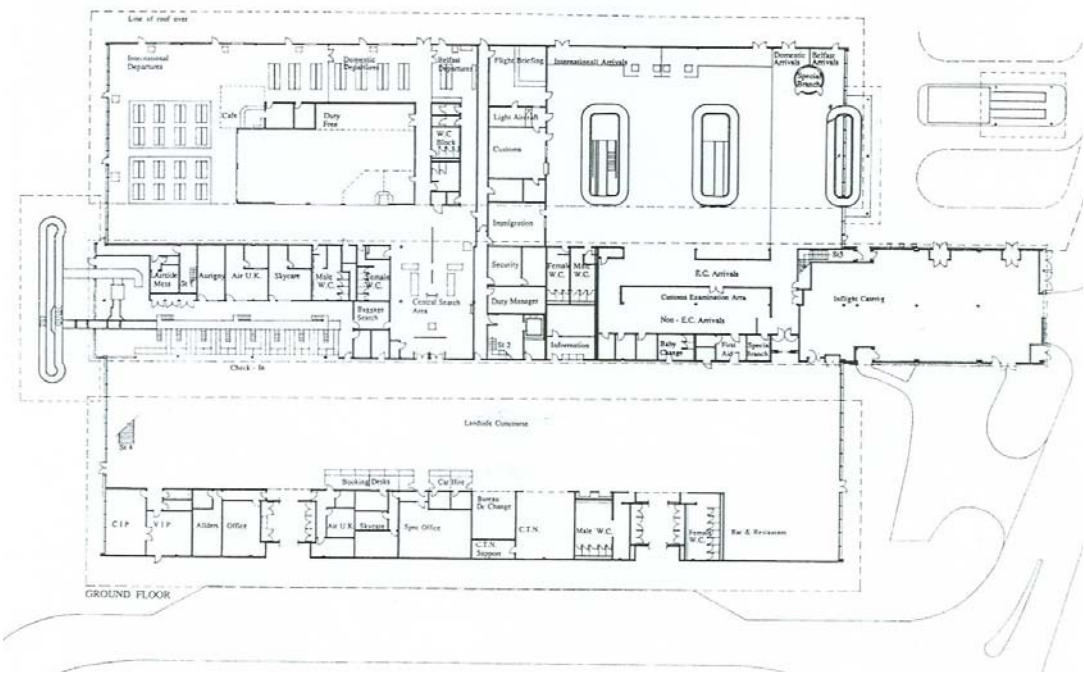

Figure 5-14 The Ground Floor of Southampton Airport,UK
(Source: CJ Blow. Airport Terminals. Second edition, Great Britain: MAC London RIBA Architectural Press, 1996)

5.4.1.1 Circulation Areas

Directing passenger flows, circulation areas contains a range of activities like cafes, bars, information desks, shops, car rental areas and ticket sales. Being defined as "landside concourse" or "assembly concourse", it is the main circulation area located between the landside façade and the ticket check-in area and functions for general public.

5.4.1.2 Passenger Check-in

Check-in hall is the part of landside and departure concourse, where passengers are assigned a seat and relieved of their baggage by automated handling system.

5.4.1.3 Departure Lounge

Separated or merged into a single area, common departure lounge, gate lounge and transfer lounge constitute departure lounge performing for three different types of passengers: departing from the airport, transferring from one flight to another and transiting on the same flight. It is relaxation area for passengers while waiting for the call to board their flight, served by a range of shops, bars, cafes, entertainments for children, flight information points and also having good views and plenty of natural light.

5.4.1.4 Gate Lounge

It is the area for assembly of passengers for the last time, before getting on the aircraft.

5.4.1.5 Transfer Lounge

Located beside the arrivals concourse, transfer lounge serves for passengers transferring from one flight to another.

5.4.1.6 Transit Lounge

While passengers wait for their aircraft to be serviced especially on long-haul journeys, they remain on the transit lounge.

5.4.1.7 VIP Lounge

It is a lounge for first-class or business class passengers.

5.4.1.8 Arrivals Lounge

Passport, customs and health control are located in the arrival lounge.

5.4.1.9 Baggage Claim

Arriving passengers spot and then retrieve their baggage from the baggage claim area in the arrival concourse, by means of conveyor belt connected with baggage-sorting area at apron level

5.4.1.10 Airside Corridor

Connecting departures and arrivals lounges, airside corridor is an alley alongside the airside façade of the terminal.

5.4.1.11 Passenger Loading Bridges

Connecting the terminal building (airside corridor or departure gate lounge) and the aircraft directly to the elevated access, passenger loading bridges provide fast, smooth and secure loading, when compared to apron vehicles or apron stairs. Due to different aircraft and passenger door sill sizes, loading bridges require elevational and directional flexibility, which necessitates them to consist of two forms: fixed and mobile.

5.4.1.12 Offices and Services:

There are a range of offices and services in capable of passenger movement systematically: airport offices, airline offices, customs office, immigration and health offices and baggage handling service. (Figures 5-15 and 5-16)

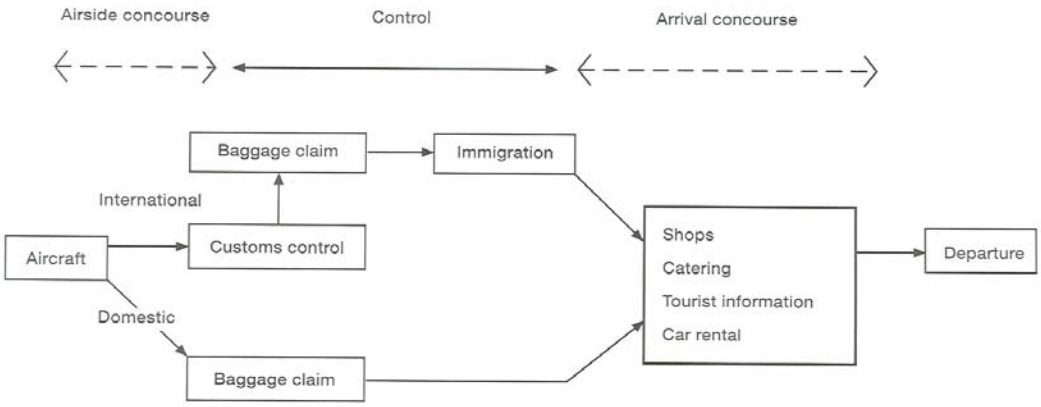

Figure 5-15 Departures flow diagram (Source:Brian Edward. The Modern Airport Terminal. London, NY : Spon Press, 2005.)

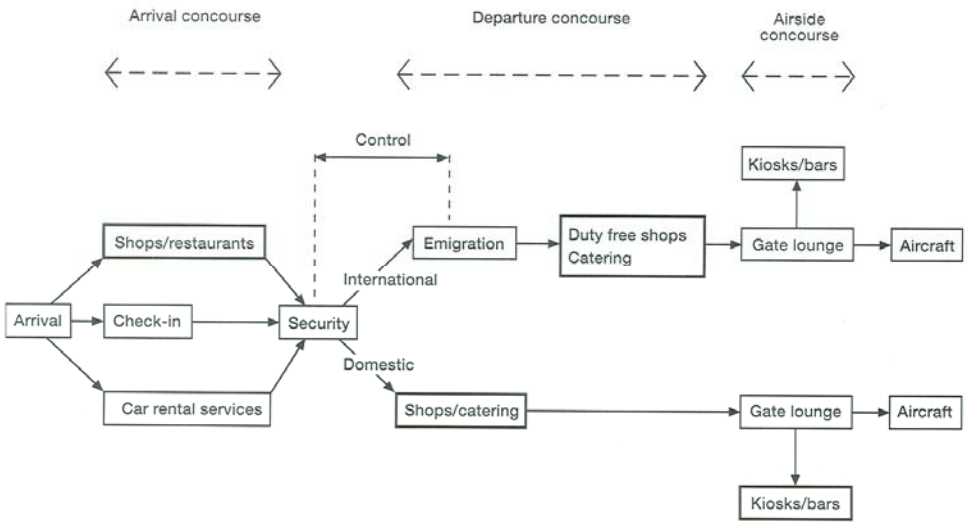

Figure 5-16 Arrivals flow diagram (Source: Brian Edward. The Modern Airport Terminal. London, NY : Spon Press, 2005.)

5.4.2 Questioning Other Programs With Respect to City Dynamics

Dynamics of cities such as urban organization, social context, cultural values and interrelationships between them constitute framework of the factors influencing the

architectural programs, namely the parameters. Therefore, this part of the chapter will try to construct parameters of the program of Kütahya-Afyonkarahisar-Uşak Regional Airport Terminal. In this manner, firstly dynamics of the region will be researched, by means of Strenghts-Weakness-Oppurtunities-Threatens (SWOT) and then the parameters will be transformed into the elements of programs.

5.4.2.1 Dynamics of the Site: Kütahya-Afyonkarahisar-Uşak Region

5.4.2.1.1 General Definition of the Region

Located in the eastern part of Aegean Region, Kütahya-Afyon-Uşak Region is surrounded by Bursa and Bilecik in the north, Eskişehir in the north-east, Konya in the east, Isparta in the southeast, Denizli in the south, Manisa in the west and Balıkesir in the northwest parts. Thus, this district, situated between the Centre Anatolia, the Aegean, the Mediterranean and the Marmara Regions, has always been strategically important in terms of transportation means by providing transition between the east-west and north–south of the country parts. In addition, together with Eskişehir and Ankara Provinces, this region constitutes the Frigya Region which is one of the components of the projects of Ministry of Culture and Tourism: "the Project of Thermal Tourism Cities of the Frigya Region" and "the Project of Tourism of Frigya Valley"[279]

5.4.2.1.2 Site

According to completed ÇED and feasibility reports, the proposed Regional Airport site is located in the east part of Kütahya-Eskişehir Highway, at a distance of 12 km from the city centre, in the surroundings of Kırgıl Village, in the Altıntaş District, Kütahya.[280]

At recent years, in order to get benefit from tourism during the whole year, the Ministry of Culture and Tourism has initiated a policy of "diverse tourism". In this respect, Kütahya-Afyon-Uşak Region having thermal, cultural and natural tourism potentials has become one of the focal points on tourism of Turkey. (Figures 5.17 and 5-18)

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[279] The Ministry of Culture and Tourism. Frigya Valley: The Environment System Report on the Scope of Project of Thermal Touristic Cities, Ankara, 2006, p.5. (translated by author)
[280] Ibid.

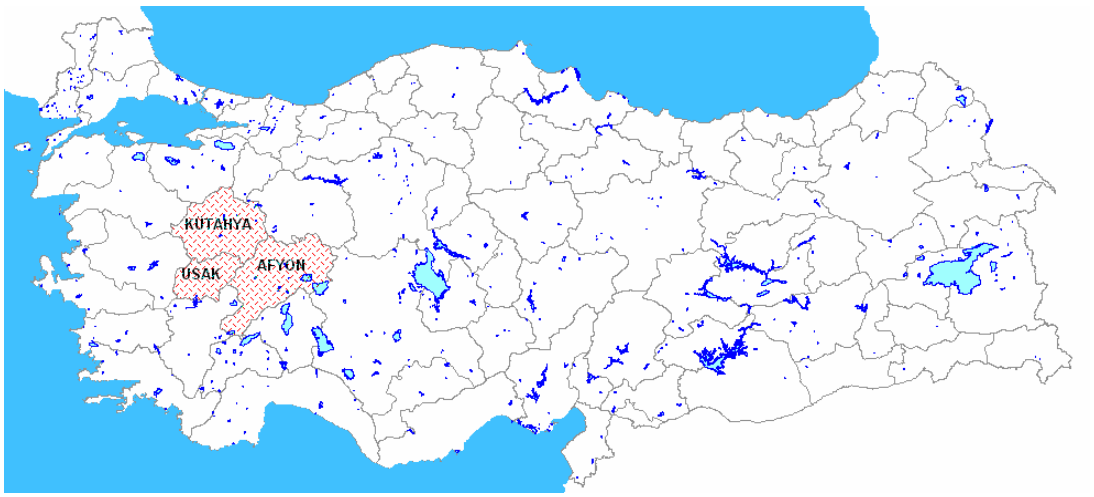

Figure 5-17 The location of the region in Turkey

Figure 5-18 The location of Kütahya-Afyon-Uşak Regional Airport

Maintaining its function during the year and importance for the health, thermal tourism gets a significant position for tourism of Turkey like that of other countries on the world. To illustrate, while the number of thermal tourists visiting the city of Beppu in Japan is 13 million, it is 10 million in Germany, and 8 million in Russian. Having rich geothermal resources and potentials, Turkey is among the top seven countries in the world and the first

country in Europe. At this respect, thermal centres of Kütahya-Afyon-Uşak Region are important for region and also for whole country. There are 19 geothermal resources in the region: 4 in Afyon, 11 in Kütahya, 4 in Uşak. Also, being the part of "the Project of Thermal Tourism Cities of the Frigya Region", this district can be a touristic attraction centre in the national and international scale. As for cultural tourism, due to the geographical location, the region has been a part of the transportation and migration network throughout the history for many civilizations and countries. There are lots of cultural values, ruins and monuments reached nowadays from the Hittite, the Frig, the Rome, the Byzantium, the Seljuk and the Ottomans. So, the region is of importance for cultural tourism and located in the route of main tourist tours. With respect to natural tourism, recreational points, national parks, the natural places for bird observation and the mountains suitable for trekking forms the route of natural tourism.[281] (Figure 5-19 and 5-20)

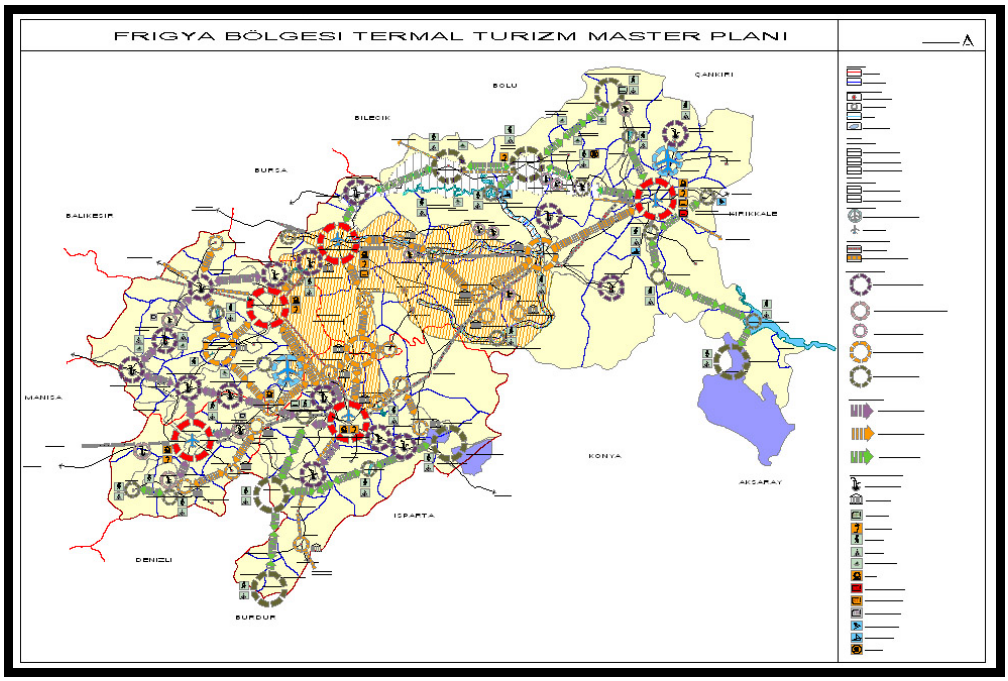

Figure 5-19 The Tourism Master Plan of Frigya Region**.** (Source: The Ministry of Culture and Tourism. Frigya Valley: The Environment System Report on the Scope of Project of Thermal Touristic Cities, 2006

[281] The Ministry of Culture and Tourism. Frigya Valley: The Environment System Report on the Scope of Project of Thermal Touristic Cities, Ankara, 2006, pp: 49-59.(translated by author)

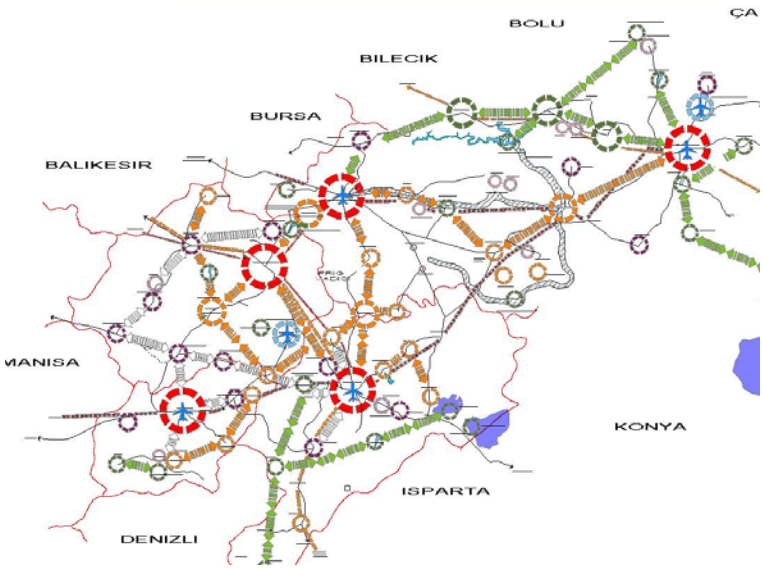

Figure 5-20 The Tour Routes in Frigya Region

However, even though Kütahya-Afyonkarahisar-Uşak Region has potentials to become a magnet for tourist flows, which will be supplied by construction of the regional airport, there are of course a range of problems on the region. In this concept, to be able to see Strenghts-Weakness-Oppurtunities-Threatens (SWOT) Analysis of the region, the provinces of the region will be analyzed in the next part.

5.4.2.1.3 Kütahya Province

Kütahya is surrounded by Bursa in the north, Bilecik in the northeast, Eskişehir in the east, Afyonkarahisar in the southeast, Uşak in the south, Manisa in the southwest and Balıkesir in the west. Being close to big cities like İstanbul, Ankara, İzmir and Bursa, Küthaya Province is located on the routes of transition of these important centres. Namely, it is one of the junction points of the Centre West Anatolia. While the population of this country is 656.903 at the year 2000, the population density of is 55 people/km^2.[282]

[282] Akün. The Phsibility Report of Kütahya-Afyonkarahisar-Uşak Regional Airport. DLHİ Archieve, Ankara, 2006, p: 84-96. (translated by author)

5.4.2.1.3.1 Transportation Network of the City [283]

5.4.2.1.3.1.1 Highway

The highway forming the north-south axis is the most important one which comes from Istanbul and Bursa, then passes through Kütahya and Afyon, next lies along the Region of Lakes and finally reach the coast of the Mediterranean Sea. Also, the highways from Eskişehir and Uşak are articulated to this axis.

5.4.2.1.3.1.2 Railway

Being the junction point of four regions, Kütahya provides the railway lines of Haydarpaşa (İstanbul)-Adana-Diyarbakır, Balıkesir-İzmir-Basmane and Haydarpaşa-Konya lines by Alayunt Terminal in the city centre. 20 passenger trains/day pass through Kütahya, in average. In addition, the rail-buses between Afyon and Eskişehir cross Kütahya.

5.4.2.1.3.1.3 Airway

Work on the infrastructure of proposed Kütahya-Afyonkarahisar-Uşak Regional Airport is conducted by Government Port and Airfield Administration (DLHİ).

5.4.2.1.3.2 Socio-Economic Frame of the City

Agriculture constitutes the main economic sector in the city, which causes that 51% of population lives in the rural areas. According to economic working order, 66% of the population works for agriculture, 12% for maintenance sector, 3% for transportation sector, 3% for building construction sector, 4% for mining sector and 7% for industry.[284] (Figure 5-21)

Since the Ottoman Empire, Kütahya has been very famous with its "çini" and ceramics. Industry comprises from traditional production like çini and ceramics, to thermoelectric power plants and mining industry. With respect to Gross Domestic Product (GDP), Kütahya has a rank of fourty throughout the eighty-one provinces. There are 6 faculties, 2 institutions of higher education, 13 profession institutions of higher education, 2 institutes connected to Dumlupınar University.[285]

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[283] The Ministry of Culture and Tourism. The Report of Kütahya Province on the Scope of Project of Thermal Touristic Cities, Ankara, 2006, pp: 16-19.(translated by author)
[284] Ibid.
[285] Akün. The Phsibility Report of Kütahya-Afyonkarahisar-Uşak Regional Airport. DLHİ Archieve,

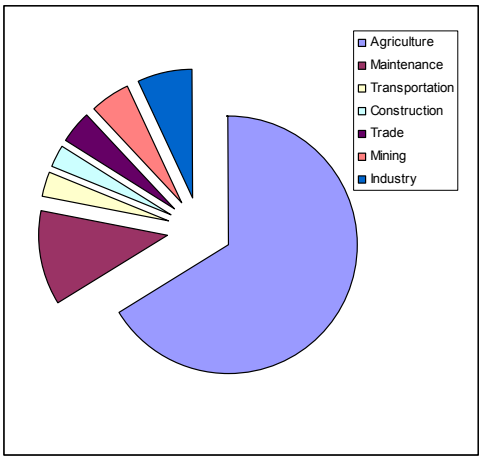

Figure 5-21 Socio-economic frame of Kütahya**.** (Source: Akün. The Phsibility Report of Kütahya-Afyonkarahisar-Uşak Regional Airport. DLHİ Archieve, Ankara, 2006.

5.4.2.1.3.2.1 Tourism[286]

Archaeological, cultural, and historical ruins and monuments, the Frig Valley, health-giving geothermal lands, forests that cover the 53% of the land and recreation spots, namely cultural, thermal and natural values of Kütahya offer significant potential for tourism. While 90% of the tourists are native and stay 1,67 day in average, 10% is the foreigners and stay 1,88 day in average.

Caverns inherited from Frigs, examples of Christian chapels and churches in the early times, Ancient Rome and Byzantium cities, Citadel of Kütahya, Hıdırlık Masjid of the Seljuk, Domaniç District where Ottoman Empire established, Dumlupınar where the war of "Başkumandan Meydan" succeeded, the monuments and cemeteries of Turkish soldiers in Altıntaş-Zafertepe, Çalköy, archeology museums, "çini" museum that is unique in the world, Kossuth Museum and the Museum of Dumlupınar Turkish War of Independence constitute cultural touristic values of Kütahya and are placed in the main tour route of

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Ankara, 2006.

[286] The Ministry of Culture and Tourism. The Report of Kütahya Province on the Scope of Project of Thermal Touristic Cities, Ankara, 2006, pp: 69-105.(translated by author)

Turkey.

As for thermal tourism, there exist 11 geothermal areas in the city, five of which constitute centres of thermal tourism: Ilıca-Harlek, Gediz-Ilıcasu, Gediz-Muratdağı, Emet-Yeşil and Kaynarca, Simav-Eynal Hot Spring Resorts. By using these thermal sources, Kütahya intends to be the charm centre of health and beauty tourism in the national and international dimension. However, there are problems about the quality and the amount of thermal institutions. There are not enough hotels and accommodations for tourists, especially for the summer time. Also, the most of the existing ones are deprived of the necessities of modern foundations.

With respect to natural tourism, due to the 53% of land of Kütahya covered with forests, the city has the potential for trekking especially on the Murat Mountain and the Gölcük High Plateau, and also recreation spots. In addition, there is a Bird Observatory in Altıntaş District. There exists museum, monuments and cemetery for soldiers in Historical Commander-in chief National Park. Even though Kütahya has no natural lakes, the small dams of Enne and Porsuk are going to be the centre of water sports.

As aresult, in Kütahya the intention of charm centre on thermal tourism in national and international aspect should be supplied with strong infrastructure and high quality care service and supplied with cultural inputs like Domaniç and Dumlupınar Districts natural ones. (Figure 5-22)

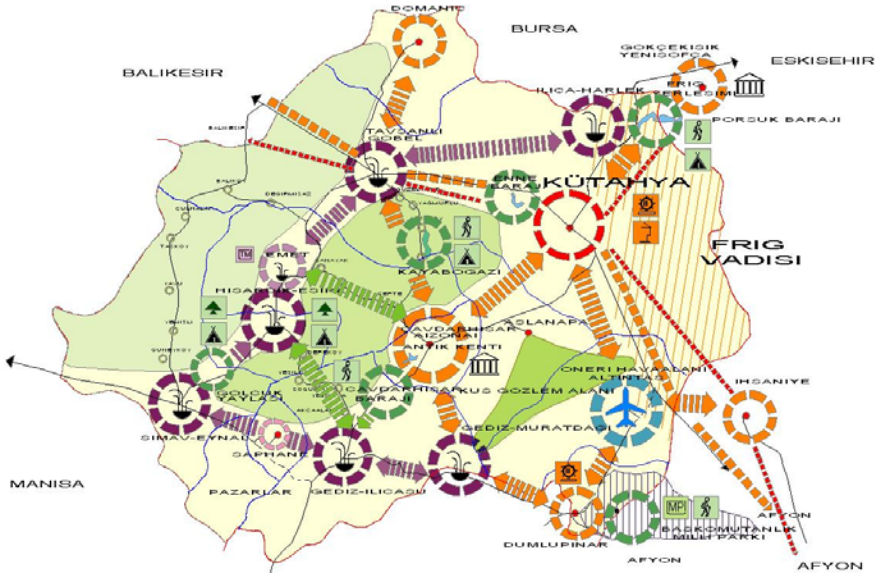

Figure 5-22 Tourism Master Plan of Kütahya (Source: The Report of Kütahya Province on the Scope of Project of Thermal Touristic Cities, Ankara, 2006)

5.4.2.1.4 Afyonkarahisar Province

Bordered with Eskişehir in the north, Konya in the east, Uşak in the west, Burdur in the south, Kütahya in the nortwest, Isparta in the southeast and Denizli in the southwest, Afyonkarahisar is a passage between the three regions: the Central Anatolia, Aegean and Mediterranean Regions. While the population in year 2000 is 810.776, 46% of that represents the urban inhabitants, 54% the rural one, which shows the significance on the employment of agriculture. With respect to Gross Domestic Product (GDP), Afyonkarahisar is the forty-fourth in Turkey.[287]

5.4.2.1.4.1 Transportation Network of the City[288]

Due to the geographical location, Afyonkarahisar is on the intersection point of important highways and railways.

5.4.2.1.4.1.1 Highway

The highways crossing the city provides the transfer of vegetables, fruits and greenhouse products from the Aegean and the Mediterranean Regions to centre of Anatolia and also affords domestic tourists from the latter to the former. To illustrate, Ankara-İzmir Highway passes through Afyonkarahisar. The city is close to important cities, which can be seen from the distances by highway. While İstanbul is 6-hour-away, Ankara is 3, İzmir is 5, Antalya is 3,5 and Isparta is 3.

5.4.2.1.4.1.2 Railway

Afyonkarahisar is located on the intersection of four different railways: Konya, Kütahya, Uşak and Denizli. Eighteen trains transit from the Afyon Railway Station per day. Also, every day the rail buses function between Afyon and Eskişehir. In addition, the project of fast train between Ankara and İzmir is on the agenda of the Government.

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[287] Akün. The Phsibility Report of Kütahya-Afyonkarahisar-Uşak Regional Airport. DLHİ Archieve, Ankara, 2006.
[288] The Ministry of Culture and Tourism. The Report of Afyonkarahisar Province on the Scope of Project of Thermal Touristic Cities, Ankara, 2006, pp: 11-15.(translated by author)

5.4.2.1.4.1.3 Airway

Even though the airport is in the centre of the city, it is used for especially military purposes; it also operates for trade functions.

5.4.2.1.4.2 Socio-Economic Frame of the City

Being on the intersection of important transportation axis and recent developments on the economy make Afyonkarahisar to break its structure that is limited to itself in the borders of the city and lead to the construction of new trade centres and accommodations. On the other hand, terrestrial climate and geographical conditions make the site to have agriculture, hanging and forestry as the main sectors on economy. In fact, 45% of the land is used for agriculture, 15% for forests and 17% for pasture in the city. With respect to education, there are 12 faculties, 4 institutions of higher education, 16 profession institutions of higher education, 3 institutes and 1 conservatory connected to Afyonkarahisar Kocatepe University, which is one of the reasons for migration from other regions to the city. However, the "law of encouragement the investment and employment" 5084 contains the city, which attracts the investments on tourism.[289] (Table 5.2)

Table 5-2 Economic sectors in Afyonkarahisar (Source: Akün. The Phsibility Report of Kütahya-Afyonkarahisar-Uşak Regional Airport. DLHİ Archieve, Ankara, 2006.)

Total	**376.778**	**100**
~~Sectors~~	~~Number~~	~~%~~
Agriculture, hunting, fishing	264.611	70,23
Mining	904	0,24
Manufacturing Industry	29.765	7,90
Electricity, gas and water	754	0,20
Construction	14.694	3,90
Trade Mintanence	16.390	4,35
Transportation and communication	9.570	2,54
Financial and Insurance	3.730	0,99
Social and Personal Maintenance	34.475	9,15
Other	1.884	0,50

[289] Akün. The Phsibility Report of Kütahya-Afyonkarahisar-Uşak Regional Airport. DLHİ Archieve, Ankara, 2006.

5.4.2.1.4.2.1 Tourism[290]

Cooperation of thermal, cultural and natural tourisms and the transportation advantages make Afyonkarahisar a focal point on tourism. To be located nearest the Region of Lakes and thermal sources, The Frig Valley will be supported by the line of fast train passing through the city centre and the proposed Altıntaş Regional Airport.

Since, Afyonkarahisar is located on the historical immigration routes and strategically transition points, it affected the formation and development of civilizations in the past: Hittite, Phrygia, Greeks, Rome, Byzantium, Seljuk and Ottoman Empire. Therefore, there are a lot of cultural formations which make Afyonkarahisar a member of "Association of Historical Cities" To illustrate, Karahisar Fortress was inherited from Hittite, the city of Amoryum from Rome, the settlements in Dinar and İhsaniye Districts from Phrygia, Gedikahmetpaşa Külliyesi and Sinanpaşa Külliyesi together with historical hot-spring resort from Ottoman Empire.

Whereas Ömer-Gecek, Gazlıgöl, Sandıklı and Heybeli Geothermal Centres provide thermal therapy and accommodation, they also afford maintaining tourism during the year. But, especially for the summer time, the existing centres are insufficient for the amount of accommodations, for the quality of caring services and in order to benefit from the geothermal centre in a maximum way.

With respect to natural tourism, the city is rich of flora and fauna, particularly in Akdağ and Acıgöl. Akdağ is famous for its forests, rivers, Tokalı Canyon, caverns, natural parks, high plateaus, monumental trees; it provides mountain climbing, canyon trips, natural walking and observation of birds and wild life. Being located on the border between Afyonkarahisar and Denizli, Acıgöl is a shallow tectonic lake and cover a lot of plant species and birds, which offers touristic observation of nature and the birds that almost extinct. In addition, carnivals are organized in the districts of the Frig Valley. Especially the fairy chimneys look like that of Cappadocia.

Consequently, Afyonkarahisar together with archeological ruins reflecting the different civilizations and cultures, caverns constituted thousands of years before, natural beauties, open-air temples, the fairy chimneys and foods has the potential for tourism, of course with some problems. (Figure 5.23)

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[290] The Ministry of Culture and Tourism. The Report of Afyonkarahisar Province on the Scope of Project of Thermal Touristic Cities, Ankara, 2006, pp: 44-76.(translated by author)

Figure 5-23 The Tourism Master Plan of Afyonkarahisar. (Source: The Report of Afyonkarahisar Province on the Scope of Project of Thermal Touristic Cities)

5.4.2.1.5 Uşak Province

Being province in 1953, Uşak is surrounded with Kütahya in the north, Afyonkarahisar in the east, Denizli in the south and Manisa in the west. City is located on the Ankara-İzmir Highway. Since, a lot of civilizations and cultures were settled down, there are a lot of historical and cultural values.[291] Moreover, like the other cities in the region, geothermal resources and natural beauties supply the cultural one. 53% of the population that is 322.313 by the year 2000 lives on the urban part of the city.[292]

5.4.2.1.5.1 Transportation Network of the City[293]

In the past, the important roads passed through Uşak such as "King Road" connecting Efes to Prsopolis and "İpek Yolu" between China and the Aegean.

5.4.2.1.5.1.1 Highway

Located on the Ankara-İzmir Highway, Uşak is connected to north with

[291] The Ministry of Culture and Tourism. The Report of Uşak Province on the Scope of Project of Thermal Touristic Cities, Ankara, 2006, p.6.(translated by author)
[292] Akün. The Phsibility Report of Kütahya-Afyonkarahisar-Uşak Regional Airport. DLHİ Archieve, Ankara, 2006.
[293] The Ministry of Culture and Tourism. The Report of Uşak Province on the Scope of Project of Thermal Touristic Cities, Ankara, 2006, pp: 12-17.(translated by author)

Afyonkarahisar-Kütahya Highway and to south with Denizli Highway. Uşak shows the effects of highways on the development of cities.

5.4.2.1.5.1.2 Railway

Ankara-İzmir Railway, which passes through the city, is important for freights, especially in favour of ceramic industry. While, Uşak reaches to Ankara and İstanbul by Afyonkarahisar-Küthaya-Eskişehir line, it achieves to İzmir by Manisa line.

5.4.2.1.5.1.3 Airway

Constructed in 1998, Uşak Airport is located at 7 km away from the city centre and has a capacity of 500.000 passenger/year. It was closed in 2002 due to insufficient passenger movements. Then, by the help of Government Policy of Regional Airports, it was reopened in 2006.[294]

5.4.2.1.5.2 Socio-Economic Frame of the City

According to Gross Domestic Product (GDP), Uşak has the rank of twenty-three in Turkey. Due to insufficient agricultural land and problems related with the irrigation, the economy is based on industry, mainly on textile, leatherworking and ceramics.[295] There are two big industrial regions in the city, which is generally one in other cities, indicating that Uşak is an industrial city. Manufacture industry relies on carpet and kilim, Uşak Kilims are even famous in national and international dimension. The factories of Hittit Ceramics and Uşak Ceramics export ties through the other cities, especially İzmir and İstanbul. However, direct exportation policy has not been developed in Uşak, yet. Between 1993 and 1994, four faculties and seven profession institutions of higher education connected to Afyonkarahisar Kocatepe Universitywere opened in Uşak, which affected the social and economic lives of the city. And also the campus of the university and the faculty of engineering are under construction and the faculty of instruction which provide education for 3000 students is on the agenda of investment program.

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[294] Ibid.
[295] Akün. The Phsibility Report of Kütahya-Afyonkarahisar-Uşak Regional Airport. DLHİ Archieve, Ankara, 2006.

5.4.2.1.5.2.1 Tourism[296]

Even though the cultural, historical, and natural richness of Anatolia are reflected in Uşak, the resources are insufficient alone to constitute tourist potential or rather they represents potential at the provincial or regional dimension. Together with geothermal areas, Treasure of Karun, Ulubey Canyon and Murat Mountain, Uşak are articulated "the Project of Thermal Tourism Cities of the Frigya Region". This communication will be supported by Ankara-İzmir fast train line and the development of the infrastructure and caring service of the city.

Ancient Cities, Ethnographic Museum, the bridges and castles on the King Road, Karun Treasures inherited from Lidyas and Eşme Kilim Carnavel form its cultural potentials. While, Banaz-Hamamboğazı, Ulubey-Aksaz, Emirfaki-Akbulak, Ulubey-Hasköy are geothermal areas of Uşak, there is no sufficient infrastructure and institutions to benefit from these sources. As for natural sources, The Murat Mountain canyons are suitable for trips with horse or trekking and also provide recreation spots. For the game of jeered, the competitions are organized in April every year. (Figure 5.24)

Figure 5-24 The Tourism Master Plan of Uşak

[296] The Ministry of Culture and Tourism. The Report of Uşak Province on the Scope of Project of Thermal Touristic Cities, Ankara, 2006, pp: 57-76.(translated by author)

5.4.2.2 Parameters of the Region

In order to create the whole program of Küthaya-Afyonkarahisar-Uşak Regional Airport Terminal; firstly, the parameters are constituted by the analysis method of Strengths-Weakness-Opportunities-Threats (SWOT), according to dynamics of the region and then these parameters are transformed into programs.

5.4.2.2.1 Strenghts-Weakness-Oppurtunıtıes-Threats (SWOT) Analysis

Table 5-3 SWOT Analyses of the Region (Source:The Ministry of Culture and Tourism. Frigya Valley: The Environment System Report on the Scope of Project of Thermal Touristic Cities)

Strengths: - Thermal, cultural and natural tourism potentials -the investments on thermal tourism. -transportation network: being on the junction point of the important highways and railways connecting east-west and north-south parts of the country -winter tourism -national parks -the routes of touristic tours -the Frig Valley -cultural and antique centres - mountain climbing, trekking possibilities - The Treasure of Karun -main tour route of Kütahya -"çini" and ceramics sector of Kütahya -"kilim"s and carpets of Uşak -archeological ruins **Weakness:** -weak connection between touristy routes and transportation system -insufficient accommodations for travellers and tourists -the absence of the identity of region as trademark -lack of advertisement of the tourism in the region -insufficient investment of the private sector -lack of the activities for every people -lack of coordination between touristy routes -lack of contemporary tourism necessitates -insufficient art historian and archaeologist	**Oppurtunities:** -the proposal Kütahya-Afyonkarahisar-Uşak Regional Airport -the Project of Thermal Tourism Cities of the Frigya Region -triangle of tourism: thermal, cultural and natural -maintaining thermal tourism during the year -the policy of the Ministry of Culture and Tourism in order to diversify tourism -the Project of Tourism of Frig Valley -The project of fast train between Ankara and İzmir -freight of fruits and vegetables to Central Anatolia -Universities, faculties and profession institutions of higher education -observation of birds and wild life -the game of jeered, -natural tourism: canyons, recreation spots -effective tour routes -coordination between different tourism kinds -festivals and carnivals -increasing of employment **Threats:** -lack of the tourism conscious -lack of coordination between the investments of three tourism kinds -the conditions for building the touristy institution -lack of scientific workings on historical areas -insufficient infrastructure system

5.4.2.2.2 Transforming parameters into programs

Table 5-4 Transforming parameters into programs

Strengths:	**Programs:**
- Thermal, cultural and natural tourism potentials	-hotel, cultural centre - hotel, cultural centre
-the investments on thermal tourism.	
-transportation network: being on the junction point of the important highways and railways connecting east-west and north-south parts of the country	-interchange between transportation modes
-winter tourism	- hotel, cultural centre
-national parks	- hotel, cultural centre
-being on the routes of touristic tours	- hotel, cultural centre
-the Frig Valley	- institute, cultural centre
-cultural and antique centres	- institute, cultural centre
- mountain climbing, trekking possibilities	- hotel
- The Treasure of Karun	
-main tour route of Kütahya	- hotel, cultural centre
-"çini" and ceramics sector of Kütahya	- institute, cultural centre
-"kilim"s and carpets of Uşak	- institute, cultural centre
-archeological ruins	- institute, cultural centre
Weakness:	
-weak connection between touristy routes and transportation system	-interchange between transportation modes
-insufficient accommodations for travellers and tourists	
-the absence of the identity of region as trademark	- hotel - institute, cultural centre
-lack of advertisement of the tourism in the region	- institute, cultural centre - hotel, institute
-insufficient investment of the private sector	cultural centre
-lack of the activities for every people	cultural centre
-lack of coordination between touristy routes	- hotel, cultural centre
-lack of contemporary tourism necessitates	- institute
-insufficient art historian and archaeologist	- cultural centre
Oppurtunities:	
-THE PROPOSAL KÜTAHYA-AFYONKARAHİSAR-UŞAK REGIONAL AIRPORT	-URBAN GENERATOR - hotel, cultural centre
-the Project of Thermal Tourism Cities of the Frigya Region	-hotel, cultural centre, institute
-triangle of tourism: thermal, cultural and natural	-hotel, cultural centre -hotel, cultural centre
-maintaining thermal tourism during the year	
-the policy of the Ministry of Culture and Tourism in order to diversify tourism	hotel, institute

Table 5-5 (cont'd)

-the Project of Tourism of Frig Valley -fast train project between Ankara İzmir	→ interchange between transportation modes
-freight of fruits and vegetables to Central Anatolia	→ - institute, cultural centre
-Universities, faculties and profession institutions of higher education	→ - hotel
-natural tourism: canyons, recreation spots	→ - hotel, cultural centre
-effective tour routes	→ - hotel, cultural centre
-coordination between different tourism kinds	→ - hotel, cultural centre
-festivals and carnivals	→ - hotel, cultural centre
-increasing of employment	→ - institute, cultural centre
Threats:	
-lack of the tourism conscious	→ - institute, cultural centre
-lack of coordination between the investments of three tourism kinds	→ -hotel, cultural centre
-the conditions for building the touristy institution	→ - institute
-lack of scientific workings on historical areas	

According to SWOT Analyses of Kütahya-Afyonkarahisar-Uşak Region, when the parameters are transformed into programs, it is seen that the region needs something that will transform its touristic potentials into touristic attraction centres. Namely, the region needs an urban generator. At this point, as mentioned above, the disjunctive theory suggests that multi-programs create architecture as a generator. In this respect, if the program of the proposal regional airport can be combined with the programs of hotel, cultural centre (for archaeology and restoration researchs) and institute, the new regional airport program can create this generator.

As the demand for air transportation has increased, the major airport terminals have begun to introduce the functions belong to business, commerce and culture. Besides, retailing, which has turned major airports into new forms of social meeting place where people gather, wait, eat, sleep and shop were also introduced.[297] That's to say, they have become "a new type of metropolis, a new city of interchange and exchange of business,

[297] CJ Blow, Airport Terminals, second edition, Great Britain: MAC London RIBA Architectural Press, 1996. pp: 163-165.

commerce and culture", which provided two results on the scales of airports and cities.[298]

As for airport scale, new elements of programs have begun to combine with the program of major airports. Thus, terminal buildings are relieved to be "just retail malls en route to the plane".[299] In Heathrow of London, a visitor's centre was created to provide passengers the opportunity to visit displays and exhibits. In Denver Airport, kidsport is provided for children's entertainment. Also, video game centres, casinos, health and fitness centres, saunas, swimming pools and hotels are juxtaposed to the program. For business facilities, while small business centres are provided in the airside lounges, conference and exhibition centres are constructed in the landside concourses.

With respect to city dimension, while the urbanism of the major airports act as urban generators, the architectural systems operate like catalysts for every kind of functions in the city.[300]

5.4.2.2.3 The Whole Program of Kütahya-Afyonkarahisar-Uşak Regional Airport

Table 5-6 Program of Kütahya-Afyonkarahisar-Uşak Regional Airport

KÜTAHYA-AFYONKARAHİSAR-UŞAK REGIONAL AIRPORT TERMINAL PROGRAM	
REGIONAL AIRPORT (1.000.000 passenger/year)[301]	
check-in&baggage handling (spphp[302]=1.4m2)	308m2
baggage claim (spphp=1.0m2)	325m2

[298] Bernard Tschumi. Event Cities(Praxis). London, England: The MIT Press, 1996, pp. 105-107.
[299] CJ Blow, Airport Terminals, second edition, Great Britain: MAC London RIBA Architectural Press, 1996. p.165.
[300] Bernard Tschumi. Event Cities(Praxis). London, England: The MIT Press, 1996,. p.107.
[301] According to Physibility Report of Kütahya-Afyonkarahisar-Uşak Regional Airport by Akün, the capacity of the airport is 309.520 passenger/year. Due to that the torism dynamics, which is the most important input for the airport capacity, are not taken into account in this report, it is thought that the capacity of airport should be three times of the estimation, approximately 1.000.000 passenger/year.

[302] Brian Edward. The Modern Airport Terminal. London, New York: Spon Press, 2005. pp: 147-148.
Spphp= Space per peak hour of passenger
According to Physibility Report of Kütahya-Afyonkarahisar-Uşak Regional Airport by Akün, the aircraft A321 with 202 passengers, is the biggest plane serving this airport. So, at the peak hours, if there is maximum two aircrafts on the apron, the number of passenger will be approximately 450 person.(total number for arrival and departure)

Table 5-7 (cont'd)

baggage sorting area	700m2
offices (airline, airport& government)	300m2
general concourse (spphp=1.9m2)	855m2
departing lounge (spphp=1.8m2)	400m2
arrivals lounge (spphp=1.5m2)	330m2
arside corridor&piers (spphp=1.m2)	220m2
restaurants, cafes and bars (spphp=2.1m2)	700m2
ticket sales,shops	500m2
airline desks, information desk, car rental	300m2
post office, telephone, cargo	100m2
florist, barber	50m2
internet	100m2
wc	135m2
circulation/building plant/walls (spphp=19,1m2)	8595 m2
sub total	**14118 m2**
HOTEL (a Hotel for 200 rooms)	
entrance, reception	300m2
hotel rooms	4800m2
offices	220m2
tea room	200m2
restaurant/bar	500m2
kitchen	180m2

Table 5-8 (cont'd)

florist, barber, shops, buffets	100m2
post office, telephone, cargo	50m2
internet	100m2
fitness centre (gymnasium,badminton, table tennis)	600 m2
hotel lounge	700m2
circulation/stairs/m&e/toilets/etc	5600m2
sub total	**13350m2**
CULTURAL CENTRE	
museum of ethnography	2000 m2
archeology museum	2000 m2
main hall(for conference, concert, theatre 150 seats)	500 m2
small hall (for seminars, 50 seats)	300 m2
exhibition hall	500 m2
museum lounge	500 m2
foyer (front of house) for halls	500 m2
foyer for performers	100 m2
restaurants	700 m2
gift shop, cinema shop, museum shop, book cafe	200 m2
offices	200 m2
circulation/stairs/m&e/toilets/etc	6200 m2
sub total	**13100m2**

Table 5-9 (cont'd)

INSTITUTE(for archeology& restoration) for 100 researches	
research rooms	200m2
main laboratory	200m2
ateliers	800m2
meeting room	200m2
laboratories	400m2
seminar halls	200m2
lecture halls	200m2
workshops	200m2
exhibition hall	200m2
print shop, stationery, book shop	100m2
cafeteria	320m2
lounge	320m2
circulation/stairs/m&e/toilets/etc	2500 m2
sub total	**5840m2**
TOTAL	**46408 m2**

5.4.3 Analyzing the elements of program

According to the questions of;

- "where is the movement in each program, and subsequent opportunity for event?,
- where is the event of movements?,
- where is the event of chance encounter and uncertainty?,

- where is the event of collisions, overlaps, distinctions?"[303],
- which elements need security?

the elements of programs are analyzed.

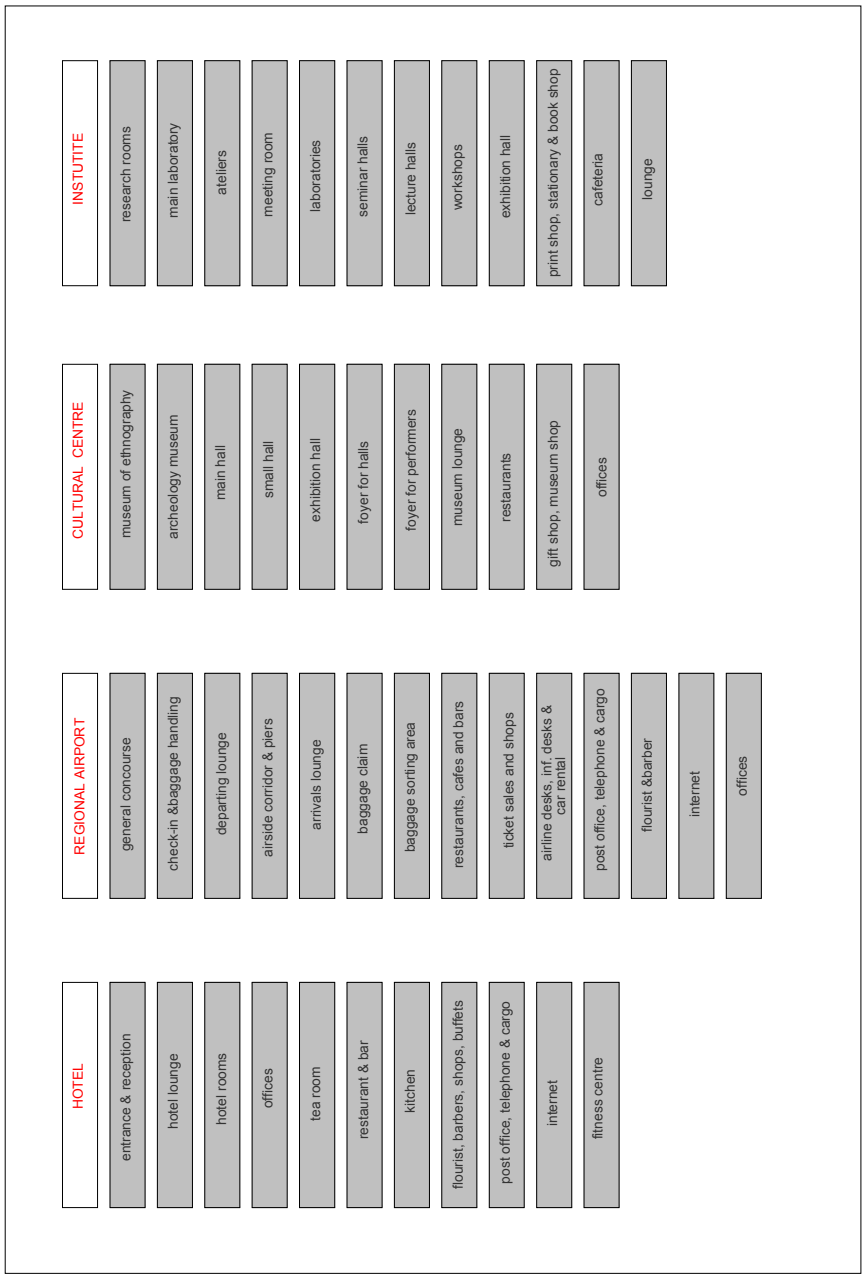

Figure 5-25 Elements of the whole program

[303] Andrea Zalewski. "Providing for Architectural Event in Brasilia." [WWW, Internet], Address: http://www.hamercenter.psu.edu/gallery/project_2_index.htm [Last Accessed: 05.07.2007].

Figure 5-26 Blue painted elements need security

ANALYSIS 1- The elements which have the similar functions are extracted from the whole program.

Figure 5-27 Analysis 1

PROGRAM 1- These elements are juxtaposed into new programs like living, researching,halls, amenities, lounges, offices and terminal.

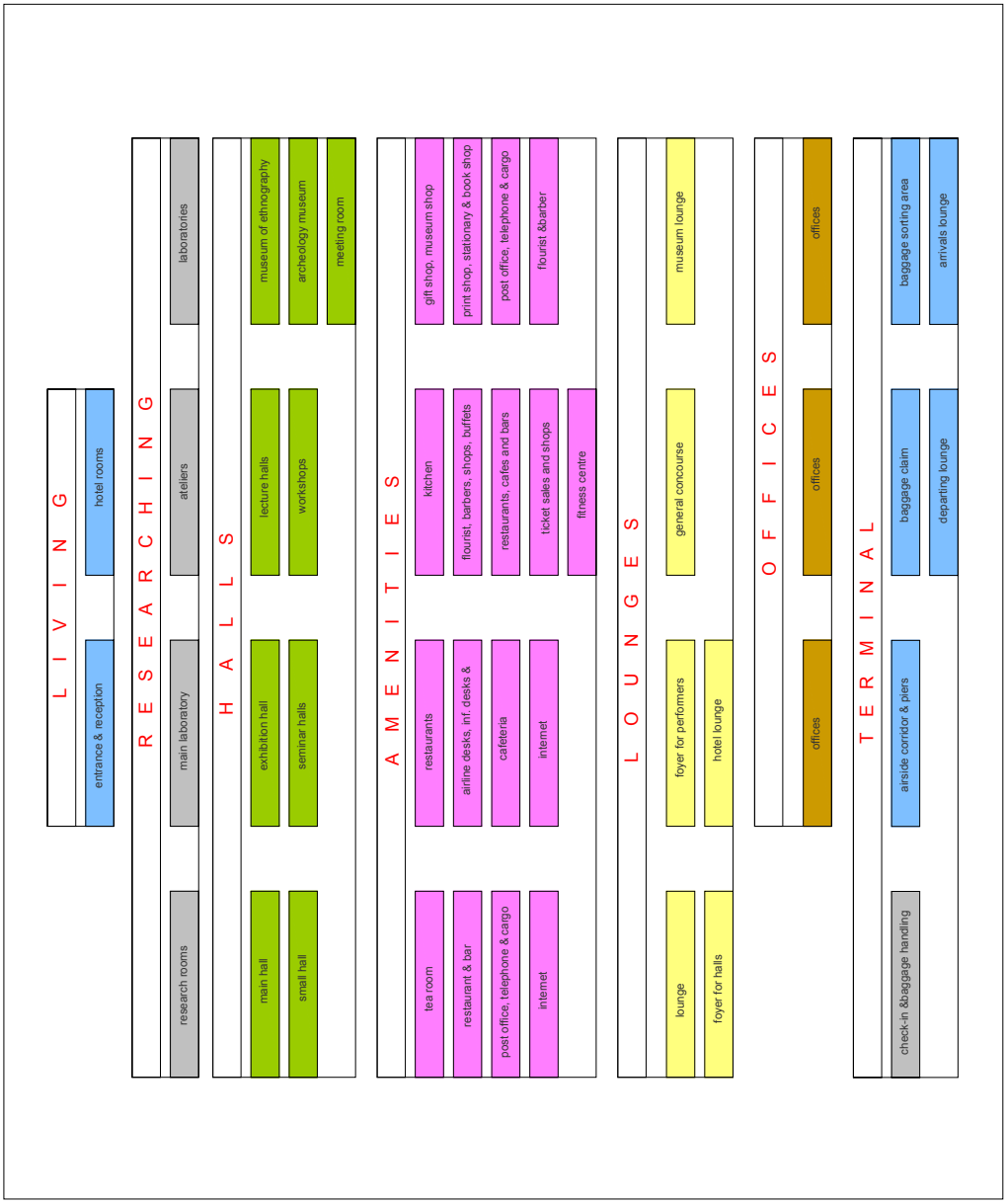

Figure 5-28 Program 1

ANALYSIS 2- The eventual functions generating events in combination are extracted from the program.

Figure 5-29 Analysis 2

PROGRAM 2- Thus, tea room, flowers, barbers, shops, buffets, airline desk, car rental, post office, computer room, fitness centre, baggage claim, general councourse, small hall, check-in and baggage handling, exhibition hall, main laboratory, restaurants, cafes and bars, workshops and cafeteria are combined in the sky lounge.

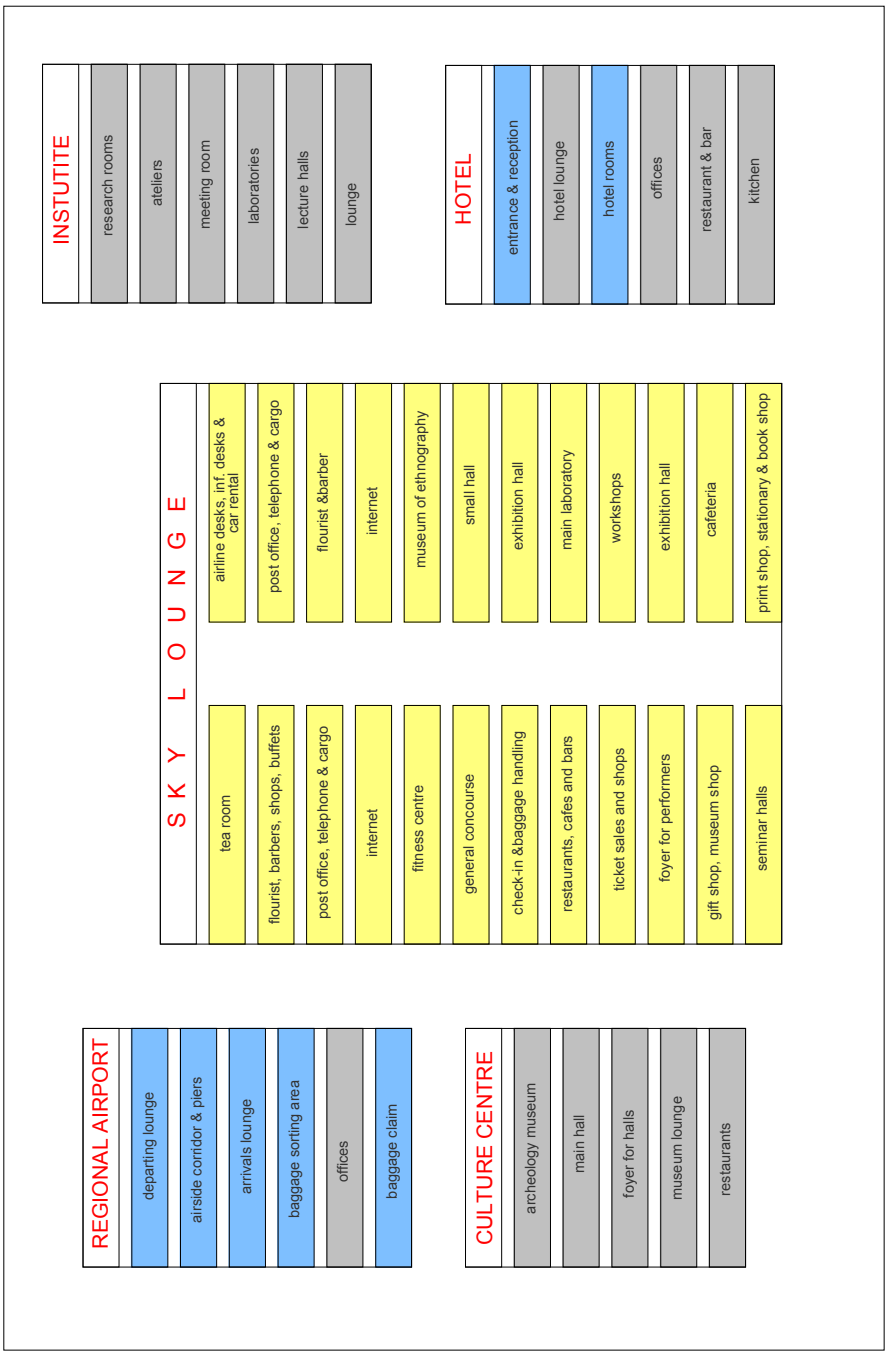

Figure 5-30 Program 2

ANALYSIS 3- The functions generating transference points or reassembly points are extracted from the program.

Figure 5-31 Analysis 3

PROGRAM 3- Thus, the lounges, concourse and foyers of programs are combined in the "in-between".

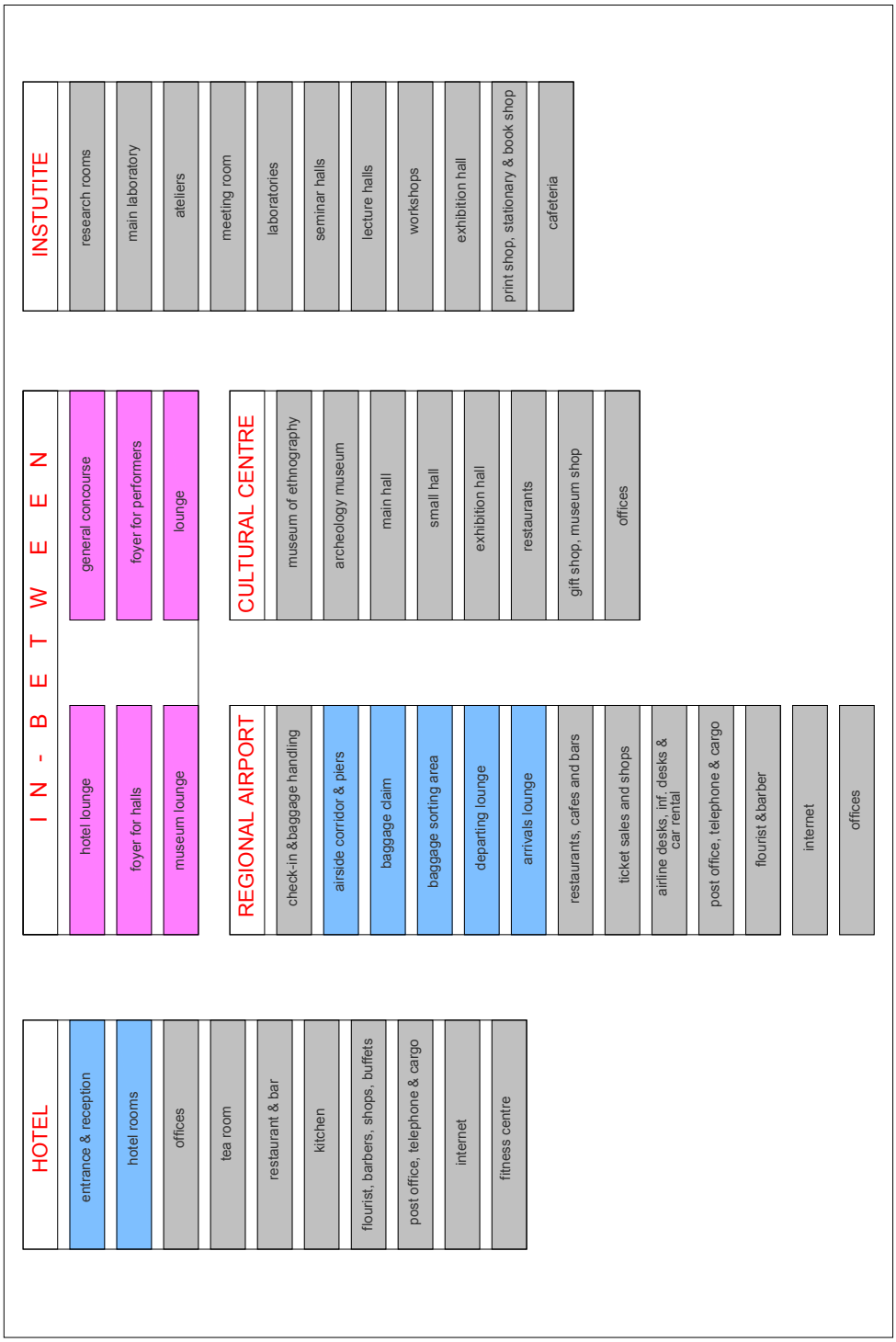

Figure 5-32 Program 3

5.4.4 Reconstructing a New Program

By using different devices such as compression, rotation, insertion, multiplication, fusion, repetition, inversion, substitution, distortion, and superposition, the elements of programs are organized. Namely, a new architectural program is reconstructed.

5.4.4.1 Program 1

By using the device of juxtaposition the “program 1” is created. The elements which have similar functions are extracted from the whole program. Then, these elements are juxtaposed into new programs like halls, amenities, lounges and offices. Thus, the elements of different programs provide relations with the others by horizontal (internal relation in each new program) and vertical (external relation with other new programs) lines in two or three dimension. Only, the elements that must be separated for security cannot be combined with the others. Program 1 is composed of 20,8% living, 6,5% researching, 24,9% halls, 23,3% amenities, 12,2% lounges, 3% offices, 9,3% terminal. (Figure 5-33)

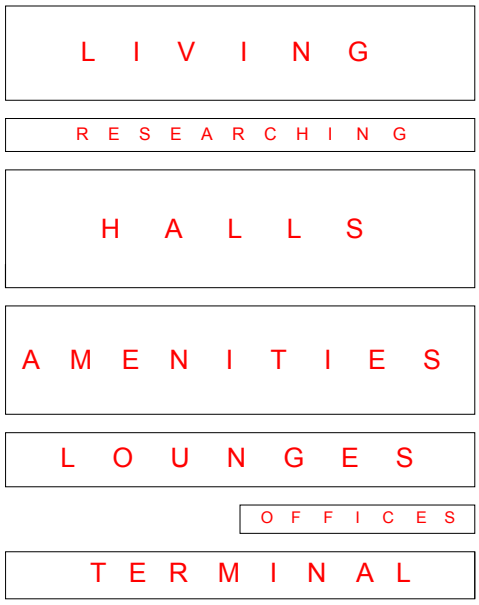

Figure 5-33 The ratio of elements in Program 1

5.4.4.2 Program 2

By using the device of insertion, “program 2” is created. The functions generating events in complex combination are extracted from the program. Thus, tea rooms, florist, barbers, shops, buffets, airline desk, car rental, post office, computer room, fitness centre, baggage claim, general concourse, small hall, check-in and baggage handling, exhibition hall, main laboratory, restaurants, cafes and bars, workshops and cafeteria are combined in the “sky lounge”. So, superposition of different programmatic elements creates a new program: “sky lounge”. In this program, the inner contradictions of the elements are revealed and this becomes a design strategy. Program 2 is composed of %35,5 sky lounge, %28,7 hotel, %17,1 culture centre, %9,7 regional airport, %9 institute. (Figure 5-34)

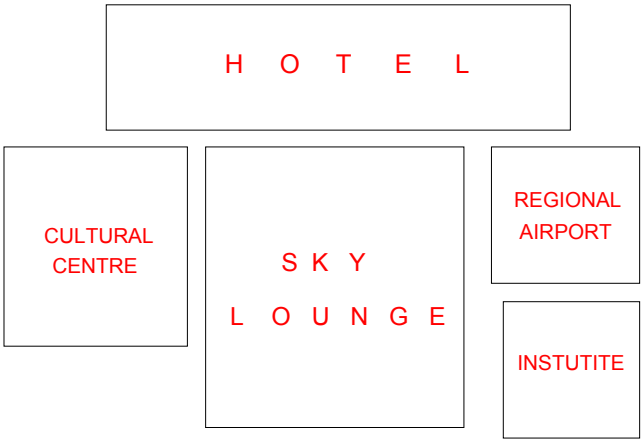

Figure 5-34 The ratio of elements in Program 2

5.4.4.3 Program 3

By using the device of intersection, “program 3” is created. The functions generating transference points or reassembly points are extracted from the program. Thus, having the same tasks, the lounges, the concourse and thefoyers of sub-programs are combined in the “in-between”. Namely, the combination of sub-programs is provided by

their intersection elements. Program 3 is composed of %30 hotel, %26,2 cultural centre, %18,4 regional airport, %12,8 institute, %12,6 “in-between”. (Figure 5-35)

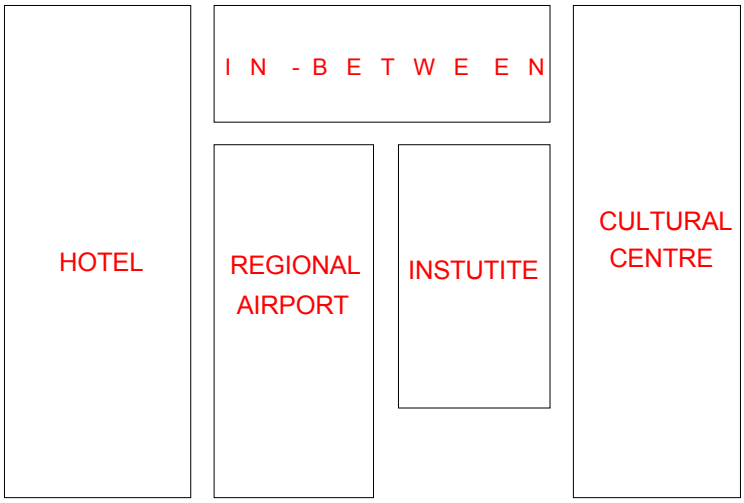

Figure 5-35 The ratio of elements in Program 3

As a result; it has been observed that using different devices, numerous programs can be designed. However, in this study, by using three different devices, three different programs are attained for Kütahya-Afyonkarahisar-Uşak Regional Airport Terminal.

CHAPTER 6

CONCLUSION

The recent typology isolates regional airport terminals from time and space and creates spaces of no identity, defined as non-places by Auge. In this context, the thesis has three objectives. The first one is to indicate the importance of regional air transportation system in the world and also in Turkey, in order to define the problems. The second objective is to investigate how regional airport terminals gain identity and how they reflect contemporary dynamics. And final objective is to attain the norms and attributes of regional airport terminals, by applying them for Kütahya-Afyonkarahisar-Uşak Regional Airport Terminal. This thesis questions the norms and attributes of regional airport terminals.

Dynamics of today have caused an increasing demand for air transportation in the world. As the demand for air transportation has increased, regional air transportation system has begun to provide integrated and sustainable air transport system in the world. With respect to Turkey, together with deregulation of air transportation system by the law of liberalization of Transportation Ministry in 2003, the government has started the "Project of Regional Air Transport". In this respect, the policy of "One Airport to Three Cities" is carried out. According to this policy, while the existing and inactive regional airports are modernized, additional new ones are put on the agenda, which caused that the norms and attributes of regional airports become the current issues of today in Turkey.

As for the second objective, this thesis claims that regional airport terminals gain identity by restructuring their architectural programs. Implementing those programs, which connects architecture to the city, is perceived as a tool for making a new architecture. In this way, redefining the use of structure, adding new elements to the programs, and restructuring the programs of new terminals become the method of this thesis. Namely, this thesis states that the notion of regional airport terminal should be reinvented by

understanding the possibilities of terminals, the nature of contemporary world and the features of the region.

By being transit points between hubs and spokes and also spokes and spokes, regional airport terminals have potential to be a device for communication by providing to meet, encounter, have conferences, sleep and entertain on one single site. Namely, even though they are non-places of globalization and late-capitalism, they can be transformed into social centers. Thus, they would be urban condition providing expansion of social life.

With respect to contemporary circumstances, our time is defined by disjunctions, where disordered and unstable social life of contemporary world creates "culture of its own". Such a disjunction between social values, use and forms and expected interchangeable combination of all create constant change and indeterminism or rather dynamism in the contemporary cities and also in architecture. In other words, the disjunctive culture transforms architecture into dynamic conception in opposition to its static and determinate description. Thus, a new dynamic architecture is created and this generates the questions of what the new definition of architecture is and how it is limited.

As the combination of fragments causes unexpected events, variety and also vitality in the city, dynamic architecture aims to create events. So, the thesis questions the ways of encouraging the vitality of the city. In this context, it applies "theory of disjunction" by Bernard Tschumi, where the city, constituted of web of events, becomes the "point of reference". Thus, "theory of disjunction" has become a method for designing dynamic architecture in a disjunctive world. According to this theory, relations between different programmatic movements can create unpredicted tensions and new social connections. Namely, programmatic collisions provide events. So, being a main tool for making architecture, program is created "by a dense multiplicity of heterogeneous activities"[304], in order to design conditions for events. As a result, this thesis constitutes the features of architectural program in the disjunctive world: flexibility, catalyst and multi-programming. And also it creates a methodology of designing program, which can be summarized as:

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[304] Bernard Tschumi. Event Cities 3: Concept vs. Context vs. Content. Cambridge, Mass.: The MIT Press, 2004, pp: 11-13.

1- Analyzing the universal meaning of given program,

2- Questioning other programs with respect to city dynamics,

3- Deconstructing the whole program,

4- Analyzing the elements of each programs,

5- Reconstructing a new program.

With respect to third objective, this methodology is applied to design Kütahya-Afyonkarahisar-Uşak Regional Airport Terminal Program. In this respect, initially the universal program of regional airports is analyzed. Then, the dynamics of the region are researched. According to those dynamics, firstly, the parameters are constituted by the analysis method of Strengths-Weakness-Opportunities-Threats (SWOT). In relation to these parameters, it is seen that the region necessitates certain elements to transform its potentials into an attraction centre. Namely, the region needs an urban generator. In this respect, if the program of proposed regional airport can be combined with programs such as hotels, cultural centres and institutes, the new regional airport program can become a generator. Then, the elements of the regional airport terminal and new programs can be analyzed. By using different design devices like compression, rotation, insertion, multiplication, fusion, repetition, inversion, substitution, distortion, and superposition and by the help of diagram method, possible set of combinations and permutations of programmatic elements are created.

This thesis designs three different programs by using different devices. The first program is created by juxtaposition of different programmatic elements having similar functions. The second one is designed by insertion of eventful elements. As for the third one, it is designed by the intersection of the elements of the similar functions. The complex and pervasive combination of different programmatic elements create events. When three programs are compared, it is observed that the first program has the most potential to create events.

In the second program, even though the eventful elements are inserted in a “sky lounge”, generally the sub-programs of hotel, cultural centre, institute and regional airport are designed independent from each other. That’s to say, whole program is confronted only in the sky lounge where the complex relations of different programmatic elements are attained. It is same for the third program. Although same functional elements are intersected in “in-between”, the sub-programs operates individually. As a result, in the

second and third programs, Kütahya-Afyonkarahisar-Uşak Regional Airport Terminal has only one public space that can create events.

On the other hand, in the first program, almost all programmatic elements of the sub-programs -except the ones separated for the security like airside corridor and hotel rooms- are combined with others. They are juxtaposed into new sub-programs like amenities, halls, lounges, offices and research facilities. Thus, the elements of different programs provide relation with others by horizontally and vertically. Additionally, while the typologies of programs are deconstructed, Kütahya-Afyonkarahisar-Uşak Regional Airport Terminal is transformed into a social centre. As a result, by the first program is chosen, Kütahya-Afyonkarahisar-Uşak Regional Airport Terminal provides a new definition of regional airport terminal and of culture and of the region, namely it gains identity.

Consequently, this thesis writes the pretext of architectural design of Kütahya-Afyonkarahisar-Uşak Regional Airport Terminal. In summary, it designs a new architectural program and presents a methodology of designing programs. When, the program is superposed to spatial configuration, architectural design can be more possible. So, this thesis provides the deficient phase between programmatic and spatial sequences, which gains an identity through the architectural designs. For a further study, by using the first program, the devices of combination of program and space should be studied more effectively.

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