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Istanbul's Changing Manufacturing Structure in the Process of Transition to Information Society

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ISTANBUL'S CHANGING MANUFACTURING STRUCTURE IN THE PROCESS OF TRANSITION TO INFORMATION SOCIETY

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ABSTRACT

Industrial process began in the 18th century played an important role in the formation of settlements and societies with rapid increase in 19th century. Effects such as transition to automation in production forms and developed technologies increased the importance of research and development in the developed countries. Transformation of computers to personal computers, developments in communication, easiness in transportation, occurrence of global economies in the world, the universalities of information by Internet accelerated development process of societies and countries.

As in the other developing countries, differentiation in production processes has been seen in Turkey, too. Especially after 1980's, beside the transition to liberal economy, differentiation in İstanbul's production form and the location of production units have been seen. Production units located in the metropolitan city used the whole advantages of the city in the first foundation years. By the time, the problems occurring in production processes and differentiation in land values have made the decentralization inevitable. Heavily change in textile, automotive and communication sectors and increase in budgets allocated to research and developments in this sector occur new development areas for the production units in the metropol.

In this paper, the examining of the conditions of manufacturing industries, reasons of their location preferences, their problems and tendencies of decentralization are tried to be expressed. Since existing manufacturing industries in Central Business District (CBD) and other second and third degree sub-centers have differences depend on the general structure of the İstanbul metropolitan area, analyzing this structure which differs the decentralization tendencies, searching the main properties causing this differentiation and comparing the results are aimed.

ISTANBUL METROPOLITAN AREA AND PLANNING APPROACH

Lacking of National and Regional Plans cause urban development and growth problems. Within national-regional-urban hierarchy ranked planning process and ranked application stage haven't been implemented.

33% of Istanbul Metropolitan area is urban settlement areas while, 15.8% of it is development area and the rest of it is forests and water reservoirs which has to be controlled.

There are two different administration authorities in Istanbul Metropolitan area; one of them is Greater Municipality the other one is Ministry of Public Works. Even if the Greater Municipality of Istanbul is responsible from 89% of the province, it has only 45% for planning and control authority.

Istanbul has the advantages of being an international metropolitan area with its location and importance in Turkish economy, politics and culture.

However there are some obstacles over using these opportunities. The two properties, which have determined the growth dynamics negatively up to now, are:

Turkey's industrialisation occurs mainly in Istanbul and the development of the city as an industrial city.

In a rapid and unhealthy developed city, the pressure of economic process base on speculations on real estates and other urban areas over business and political decision mechanism.

Beyond these factors,

To be in the intersection of national and regional transportation web, direct transportation with whole regions, several working opportunities, high ratio of infrastructure and social facility areas according to other regions cause migration.

As a result of these negative effects, Istanbul comes face to face with such problems:

- Water reservoirs and forest areas threatened by unauthorised building tendency,
- Housing problem,
- Insufficient social facility areas and green lands,
- Transportation difficulties,
- Noise problem,
- Air and water pollution,
- Unemployment problem,
- Public order problem,
- Lack of integrity among diverse social groups.

In order to find solutions to problems of whole of the metropolitan area and find the metropolitan development tendencies for 15 years period, 1/50 000 scale Istanbul Metropolitan Area Sub Region Master Plan in November 1995 was implemented.

By the year 2010, it is aimed to establish the balance between conservation and development for Istanbul as a city that unites with the economic structure of the world and the region (Middle East, Balkan, Europe and Islamic Countries), that uses the regional opportunities well and assumes a pioneering role in this structuring, emphasising history, culture, science, arts, politics, trade and services, while embracing the history, it carries at the universal level, and its cultural and natural characteristics; attributing it the status of a world-known city today just as in the past, in accordance with its historical and cultural identity while ensuring its

growth and development in coherence with the progress of the country and the region while achieving its place among the ranks of world metropolitan cities in the process of world's economic development.

The main strategies of the Istanbul Metropolitan Area Sub-Region Master Plan are as follows:

- Rule Of Specialisation: Within the whole of the Metropolitan Area planning the housing-work relations of especially those who are new comers by resolving it in a rational manner and improvement of these relations which were ill defined in the previous structure, within the framework of a plan.
- Rule Of Ranked Centers: Achieving the growth of the urban macroform in a linear and multi-centered fashion with a degree of ranking.
- Rule Of Ranked Density: In accordance with the analysis carried out for the whole of Istanbul, decreasing the sustainable population densities gradually from the centers to outwards, and decreasing the mean population values.

According to these strategies the decisions accepted for industrial areas, Central Business District (CBD) and sub- centers are:

Industry: Sectors of manufacturing industries which have contamination effect, over 10 000m² building area, more than 500 labour, low value added, high capacity of power equipment, established in water collection reservoirs and inner city will be moved out of metropolitan area. Instead of these industries, industries using high technology and service units with production and selling, will developed. Middle sized industries located scatterly will be collected in planned industrial areas in the edges of the metropolitan. Other manufacturing industries necessary for city center and having 1-9 employee will be rehabilitated.

Central Business District : The Historical Peninsula had been the first core of the city which serve throughout Istanbul since the ancient times. By the decentralization of production units to Ykitelli Organised Industry and occuring a new Central Business District in Topkapı-Maltepe-Bayrampaşa, the historical identity of the Historical Peninsula will be kept and the new CBD will be international economic and financial decision center as aimed.

Sub-centers: By the decentralization of manufacturing industries, first degree centers dense with specialised commerce, and service functions for administration, coordination, finance foundations, second and third degree centers dense with commerce and service were suggested.

THE DEVELOPMENT OF ISTANBUL METROPOLITAN AREA AND INDUSTRIAL ENTERPRISES

Social, economic and political decisions have affected the development process of the metropolitan area as well as natural decisions. The result of this has been seen in micro scale planning decisions and macroform shaping. National plans for 5 years are aimed to prevent the agglomerations of industrial enterprises to metropolitan areas as Istanbul. In order to realise these politics, several means such as investment encouragement credits have to be given out of these regions for long term and in attractive conditions. However decisions and measures haven't prevented the agglomerations of enterprises to Istanbul Metropolitan area, especially to Central Business District. It's reasons can be described as follows:

Industrial establishments located in great cities minimise the foundation cost by using existing infrastructure facilities, easily maintained employment services and manufacturing inputs, and maximises the benefit by decreasing operation cost. Establishments minimising the first enterprise cost can market products to the other provinces because of easy transportation and the great demand facility of great city. At the same time, these establishments attract other ones using inputs-outputs of each other by 'staying together' principle and urban development process gradually increases.

With the development of metropolitan cities, investments depend on the industrialisation increases. From the beginning of industrialisation process, investors prefer city centres, dense with commerce and service functions, for the first establishment area. Some reasons of investors to prefer the city centre are:

- Existing infrastructure facilities in city centre,
- To be close to the market,
- Qualified labour,
- Using each others input-output as a result of being together
- The minimum cost in the market of the product,
- Several organisation related to the market,
- Extensive service sector,
- Ready physical conditions for production (even the comfort conditions aren't sufficient)

Beside these conditions, especially in Istanbul where small and middle sized manufacturing that occur the basic of Turkish industry are dominant, closeness to the market are more important than closeness to the raw material in the location of investments.

Depend on these reasons, industrial enterprises in CBD and other regions have played an important role in urban development process. When the natural structure of Istanbul is examined, there are natural, demographic and investment differences between east and west side of Bosphorus . Especially from the beginning of foundation, the preference of west side and inner rampart for the development of city have caused differences in social texture. The slower development of enterprises and developments in east side cause less population and less rural development while there is more urban areas and commerce and service areas in west side. However depend on the differences in preferences in recent years unbalance between east and west side have decreased gradually. To describe this, the demographic structure of metropolitan and the development process of industrial enterprises can be explained.

Table 1. Distribution of Labour and Working Area In Istanbul Metropolitan Area Between 1985 and 1992

1985	WORKING AREA	PROPORTION (%)	LABOUR	PROPORTION (%)	POPULATION PROPORTION(%)*
EAST	33.114	20.5	153.472	20.3	31.7
WEST	128.076	79.5	602.702	79.7	68.3
TOTAL	268.919	100	905.529	100	100
1992	WORKING AREA	PROPORTION (%)	LABOUR	PROPORTION (%)	POPULATION PROPORTION(%)*
EAST	68.266	25,4	223.709	25,5	34
WEST	200.653	74,6	681.820	74,5	66
TOTAL	268.919	100	905.529	100	100

Source: General Population Census Datas, Industry and Working Areas Census, 1992

In Istanbul the number of labours in 1990 is 2.539.963. 25,5% of the labours work in east side while 74,5% work in west side (Table 1). When these numbers are thought with people living in both sides, the importance of transportation between Asia and Europa can be seen. From 1950's industrialisation in Turkey has greatly affected urban development process. Especially the differences between undeveloped and developed regions of Turkey have directed the location preferences of industrial investments. Enterprisers have chosen mostly metropolitan areas because of it's attractive investment and market facilities.

When we look at the process of Istanbul's industrial investments, the rapid industrialisation process in 1950 first affected Central Business District and the transportation system, commercial and industrial functions have aggregated mostly in Eminönü and Galata environment on the west side. In this period 55% of the working areas on the west side was in Historical Peninsula and rampart.

From 1960's as a result of increase in industrial investments new industrial areas have developed. While "area dense industries" have been founded in east side, "labour dense industries" have been founded in west side. After 1970's Historical Peninsula (Sirkeci, Eminönü, Küçükpazar, Beyazıt), the first founded regions of commerce and industrial investments, became Central Business District. On the east side Kartal, Maltepe, Tuzla, Yakacık, Çayyova, Gebze; on the west side Halkalı, Sefaköy, Firuzköy, Alibeyköy, Kağıthane have occurred as new industrial regions.

In 1990's essential changes in the industrialisation structure of Istanbul Metropolitan area have been occurred. With it's population close to 10 million, beside the differences in centre hierarchy, 1st degree centre functions have occurred in Bakırköy, Kadıköy by the development of service sector. Service functions take place in large areas convenient to high buildings and related with main transportation roads. Close environments of D-100 and TEM Highways and Büyükdere, the development areas of west side are the examples of this transformation.

In order to test the 1/50 000 scale Istanbul Metropolitan Area Sub-Region Master Plan (1995) decisions about the decentralization of industry from CBD and other sub-centers, the general structure of CBD, 1st, 2nd, 3rd centers and manufacturing industries are examined and questionnaires are done to define the decentralization tendencies of industries.

THE CONCEPT OF THE RESEARCH AND DATA FOUND

Before the CBD and other sub-centers' questionnaires the existing structure was examined. Locational preferences, physical and sectoral differences between CBD and other region's industrial investments are found.

When the production unit's location preferences are examined : The production units in CBD prefer this area because of ready market, skilled labour supply, being together with input-output using production units, low rent, unrecorded economic activity. In 2nd and 3rd degree sub-centers industrial areas usually locate around main transportation axes and it's close environment. While these areas were defined as Istanbul's empty places in their first foundation years, with the metropolitan development and growth these areas have been found in settlement units and caused problems. Industries found in these regions neglected some important location criteria such as supply of raw material and "being together economies", and prefer especially market, easy transportation, cheap land supply. After a time the decentralization of production units became unavoidable because of an increase in capacity and lack of expansible area,

difficulties in transportation, planning decisions taken by municipalities. When the upper table is examined, some main specialities for 3 region are:

Table 2: Comparison of Research Area According To Physical Specialities

CENTERS	CENTRAL BUSINESS DISTRICT (HISTORICAL PENINSULA)		2 ND DEGREE (KARTAL REGION)		3 RD DEGREE (MALTEPE REGION)	
SIZE OF THE AREA	10-30 m ² 30-60 m ² 60-100 m ²	% 16 % 23 % 61	< 1000 m ² 1000-10 000 m ² 10.000 m ² <	% 5 % 35 % 60	< 1000 m ² 1000-10 000m ² 10.000 m ² <	% 33 % 53 % 14
WAREHOUSE OF WORKING AREA	10-30m ² 30-60m ² 60-100m ²	- % 30 % 60	< 1000 m ² 1000-10 000m ² 10.000 m ² <	% 10 % 90 % 100	< 1000 m ² 1000-10 000m ² 10.000 m ² <	% 20 % 40 % 75
OWNERSHIP	10-30m ² 30-60m ² 60-100m ²	% 5 TENANT %64 TENANT %60 TENANT	< 1000 m ² 1000-10 000m ² 10.000 m ² <	% 65 TENANT % 40 TENANT % 5 TENANT	< 1000 m ² 1000-10 000m ² 10.000 m ² <	%63 TENANT %55 TENANT %27 TENANT
SUPPLY OF RAW MATERIAL	CLOSE ENVIRONMENT- ISTANBUL		ISTANBUL-ANATOLIA- ABROAD		ISTANBUL-ANATOLIA- ABROAD	
MARKET	CLOSE ENVIRONMENT- ISTANBUL-ANATOLIA		ISTANBUL- ANATOLIA- ABROAD		ISTANBUL-ANATOLIA- ABROAD	
DENSE INDUSTRIAL SECTORS	% 27 % 25 % 20 % 18 % 10	OTHERS FOOD IND. METALOBJECTS IND. CHEMICAL IND. TEXTILE IND.	% 33 % 22 % 14 % 12 % 19	METAL OBJECTS IND. MAYN METAL IND. CHEMICAL IND. STONE-SOIL IND. OTHERS	% 35 % 12 % 8 % 8 % 37	METAL OBJECTS IND. STONE-SOIL IND. CHEMICAL IND. PAPER IND. OTHERS
LAND USE	RESIDENTIAL AREA COMMERCE MANUFACTURING IND.		RESIDENTIAL AREA MANUFACTURING INDUSTRY		RESIDENTIAL AREA MANUFACTURING INDUSTRY	
SOCIAL TEXTURE	LOW INCOME GROUP SINGLE		LOWER- MIDDLE INCOME GROUP FAMILY WITH 3-4 CHILDREN		LOWER - MIDDLE INCOME GROUP- FAMILY WITH 3-4 CHILDREN	

CENTRAL BUSINESS DISTRICT

- Beside the commerce and traditional hand-arts there are also some production units (metal, chemistry, food, textile industry) in the region.
- This production units' size are changing between 10-100 m² and working conditions are unhealthy.
- Production units are found in the first story of houses. Mostly they are tenants and economic activities are out of records.
- Market is in close environment and Anatolia

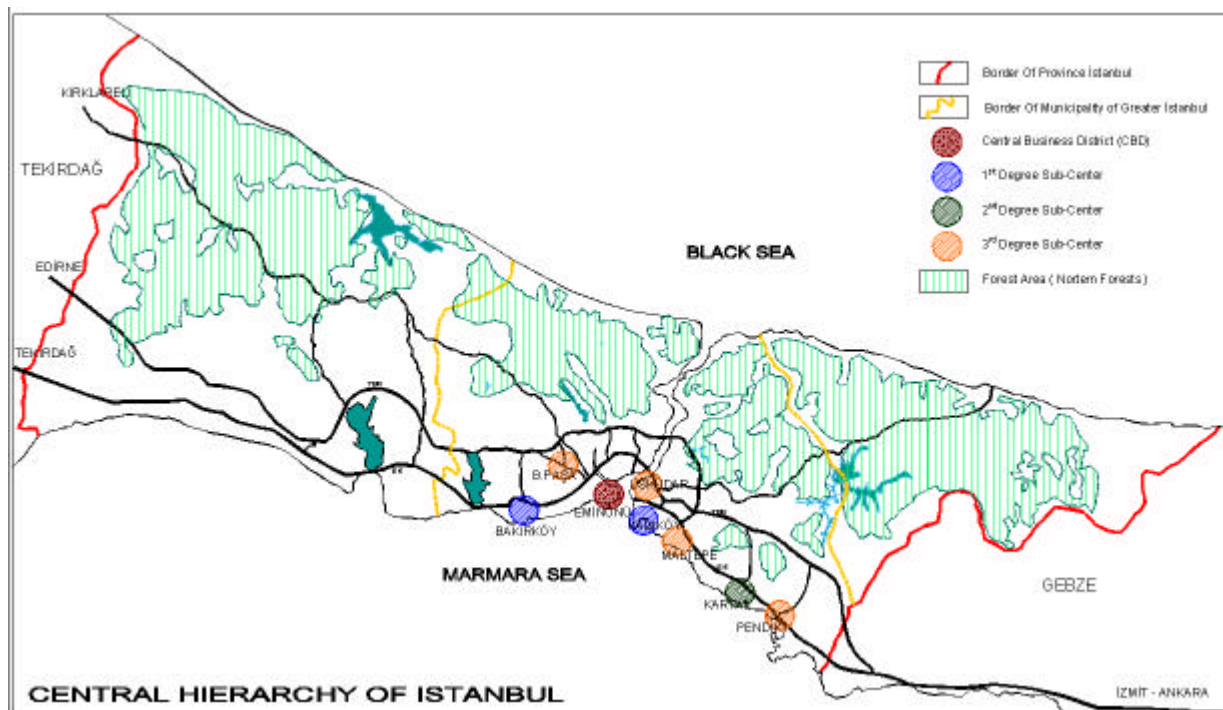
- Cheap labour supply, low accommodation conditions and working conditions without social assurance are advantage for production units.

2nd DEGREE SUB-CENTER (KARTAL REGION)

- The manufacturing units are mostly metal objects, main metal, chemical industries
- The production unit's size are mostly $10.000\text{ m}^2 <$ and they are the nearly the oldest industries of the east side of Istanbul
- As the size of the production unit decreases, tenancy increases. However, the most clear characteristic of the east side of Istanbul is industries with large areas and they are mostly owners.
- Supply of raw material and market opportunities are from Istanbul, Anatolia and abroad.
- The advantages of this region are cheap labour supply, low accommodation conditions, working without social assurance and social texture of the region is lower-medium income group

3rd DEGREE SUB-CENTER (MALTEPE REGION)

- The main industries in the region are metal objects, stone-soil, chemistry, paper industry.
- The size of the production units are mostly (53%) between $1000-10\ 000\text{ m}^2$ and they are the industries to be moved to the planned industrial areas at the edges of the metropolitan.
- Production units are working together with residential and commerce functions and most of the industries up to $10\ 000\text{ m}^2$ are tenants.
- Supply of raw material and market opportunities are from Istanbul, Anatolia and abroad.
- Cheap labour supply, low accommodation conditions, working without social assurance and mostly lower-medium group families are the characteristics of this region.



Through these existing conditions and tendencies, Master Plan determined decentralization decision in its aim and politics for the production units in CBD, and sub-centers. Sectors of manufacturing industries which have contamination effect, over 10 000m² building area, more than 500 labour, low value added, high capacity of power equipment, established in water collection reservoirs and inner city will be moved out of metropolitan area. These areas will be transformed to high technology industrial areas (only the research-development centers are allowed) and commerce, service and tourism center. Middle sized industries located throughout the metropolitan (in CBD or sub-centers) and work in unhealthy conditions will be collected in planned industrial areas in the edges of the metropolitan. Commerce and service functions specialised in administration, coordination, finance will come to the evacuated areas and CBD will be historic, commerce, service and tourism center of the future. Other manufacturing industries necessary for city center and having 1-9 employee will be rehabilitated.

RESULT

In the locally transition regions throughout the metropolitan area there are differences in the decentralization tendencies of CBD and other sub-centers according to the different structures of production units. The research indicate that some of the production units in CBD moved while the others are still working. In 2nd and 3rd degree centers industries are moving to new areas spontaneously.

The Evaluation of Production Units' Decentralization in Central Business District (CBA)

Production Units have chosen to move to Organised Industrial Region because of :

- Using the advantages of being together,
- Being in a planned and organised industrial region,
- Healthy working conditions,
- Easy transportation facility

The reasons of production units which haven't moved to Organised Industrial Region yet are:

- Anxiety of losing market formed in the region,
- Wish of sustaining the unrecorded economic activity,
- Risk of losing existing cheap and social security,
- Not easily access to short period labour,
- Low rents for working areas,
- Anxiety of increasing the transportation cost occur in the marketing of the product,
- The existence of manufacturing industries with less capital and short period forward sale opportunity,
- The manufacturing industries occurring mainly from tenants

The Evaluation of Manufacturing Industries' Decentralization in 2nd and 3rd Degree Sub-Centers

- Qualified industries bigger than 10000 m² and 73% landownership affect the moving tendency negatively. In the working area questionnaires, 78% of them said that they are satisfied from the environment and they don't think to move.
- The questionnaires in 1000-10000 m² size industries show that they are mostly 55% tenants and 60% of them are satisfied from the environment.

- The questionnaires in <1000 m² size industries show that 63% of the investors are tenants and 48% of them are thinking to move.
- These numbers indicate that according to the industrial size, the proportion of tenants are changing indirectly and as the tenant number increases, the moving tendency increases too
- Even the landowner investors aren't satisfied from the production conditions of the environment, they are anxious about the worth increase of their parcel after they move and without moving totally they want to use their area for manufacturing industry headquarter or commerce and tourism center.
- Most of the tenant or landowner investors pointed out the lack of industrial expansion. Beside this, some of the problems are energy, water, drainage, marketing and transportation

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