A Project of Tehran Municipality ICT Organization in the Promotion of Life Quality

ATLAS of Tehran Metropolis

TEHRAN MUNICIPALITY ICT ORGANISATION 2012
11 Atlas of Tehran Metropolis
12 Address of the Best Practice
   The Nominating Organisation
   The Partners
13 Financial Profile
   Category of the Best Practice
14 Level of Activity
   Eco-System
19 Summary
20 Key Dates
   Narrative
23 SITUATION BEFORE THE INITIATIVE BEGAN
   ESTABLISHMENT OF PRIORITIES
26 FORMULATION OF OBJECTIVES AND STRATEGIES
   MOBILISATION OF RESOURCES
29 PROCESS
42 RESULTS ACHIEVED
46 SUSTAINABILITY
48 LESSONS LEARNED
49 TRANSFERS
50 RELATED POLICY/IES OR LEGISTLATION
THE BEST PRACTICES AND LOCAL LEADERSHIP
IRAN

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TEHRAN MUNICIPALITY ICT ORGANIZATION
Spatial development of Tehran has, due to its political and economic developments, resulted in its structural heterogeneity and expanding metropolitan functions. A glimpse at the spatial-structural of Tehran since 1966 shows that mismanagement, lack of strategic planning and inappropriate urban spaces has resisted sustainable development of the city in various ways. Now that the new comprehensive plan of the city (approved in 2007 by Iran’s Supreme Council of Urbanization and Architecture) has been put into effect, how can the city be managed to prevent further damages to the city and to restore previous shortcomings? Sustainable urban development may be an appropriate approach to face modern phenomena of urban development. Development in Tehran is so boisterous; to address the accumulated expectations of the citizens in the face of fast growing technology and communication's media, there is no alternative to knowledge-based management inspired by collective wisdom. For this reason, urban management has, within its scientific chart, aimed at products that have targeted the foundations of urban development.

Clearly, Tehran cannot be managed without attention to its environs. At present, over fifty urban places within these environs are in constant and daily contact with the city, affected by many changes happening in Tehran. Since the greater Tehran manages urban development issues at three local, regional and national levels, intelligent management of the city would enhance its efficiency. One of the outputs of intelligent man-
is the expansion of scientific products in the field of urban planning and development. An Atlas of Tehran Metropolis is an intelligent step toward understanding the complicated urban issues, helping the urban managers with their researches on urban management and planning issues.
I consider it my duty to express my deepest gratitude to the respectable managers of Geographical Institute of Tehran University and Information and Communication Technology of Tehran Municipality, and, specially, to my dear colleagues at Tehran University Dr. Seyed Mohsen Habibi, Dr. Hassan Ali Faraji Sabokbar and Dr. Seyed Ali Badri. There is no doubt that without the sincere efforts of these colleague and other specialists at Tehran University and Tehran Municipality, this Atlas of Tehran Metropolis would not materialize. I hope, however, that this Atlas would serve as an introduction to better and more comprehensive Atlases in the future. I pray God Almighty would bestow on these dear ones with more opportunities for offering service to the Islamic Iran.

Mohammad Bagher Ghalibaf
Mayor of Tehran
Tehran Municipality ICT Organization is proud to publish a new version of Tehran metropolis Atlas in line with one of its main responsibilities, which is disseminating information to the public especially information about the city of Tehran. The atlas has been prepared collaboration with a group of professors in University of Tehran and experts of Tehran Municipality. Compared to the previous atlases, this new version presents more detailed information, which makes it possible for researchers and experts from various fields to dig more detailed information. Also, the atlas offers the latest urban changes in the form of maps, charts, tables and images, presenting a clearer image of Tehran metropolis.

Accessibility to the public through the internet site of Tehran Municipality is another advantage of the atlas which is itself a yet another electronic service offered to Tehran citizens by the municipality. It is to be noted that the atlas has made great use of the expertise of specialists from all related fields to present an exact picture of the city. However, if there are flaws and shortcomings in the atlas, we hope that our readers will help us remove them by sending us their comments and suggestions through our website. Finally, we hope that both specialists and common citizens will find the book useful.

Ali Asghar Ghaemi
Managing director of Organization for Information Technology
Iran and Tehran City Location in the Middle East
Tehran City Limits and Location in the Southern Foothills of Alborz Mountains
ATLAS of Tehran Metropolis
1. a. Name of the Best Practice  Atlas of Tehran Metropolis  
b. City  Tehran  
c. Country  Iran  
d. Region  Asia  
e. Has this initiative been submitted previously?  No

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Name of the Organization  Information and Technology Organization of Tehran Municipality  
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4. Type of Organisation  Community-Based Organisation

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a. Name of Organisation  IAARA  
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   Email  office@iaara.org.ir  
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d. Type of Organisation  Non-Governmental Organisation

6. The Partners

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   Fax  +98(0)2166952388
7. Financial Profile

<table>
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<th>Year 2007</th>
<th>Year 2008</th>
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8. Category of the Best Practice

**Tools and Methods**
1. Software and hardware
2. Planning tools and techniques
3. technology and systems
4. Management tools and systems
5. Research and development
6. Networking
7. Training and capacity building

**Urban Governance**
1. Urban management & administration
2. Public policy
3. Human resources and leadership
4. Management and information systems
5. Transparency and accountability
6. Public-private partnerships
Use of Information in Decision Making

1. Indicators and statistics
2. Management (Management Information Systems)
3. Use of media and awareness-building
4. Use of Information and Communication
5. Policy making
6. Management (Management Information Systems)
7. Use of Information and Communication Technology
8. Research

9. Level of Activity City
10. Eco-System Semi-arid
SUMMARY
There was not any clear image according to statistics from Tehran metropolis, which had a great physical expansion and population increasement during last decades. Tehran’s information and statistics are being collected and maintained by relevant organizations in their time of need. In this situation Tehran’s municipality decided to run a project for better understanding of complex problems of Tehran metropolis. In 1997, Tehran municipality’s ICT (Information and Communications Technology) organization introduced Tehran’s Atlas project. This Atlas was developed by Tehran University and was praised by citizens.

In continuation of this project, the second Atlas of Tehran for evaluating the transformation of the city during last 30 years was developed and published in 2010. It is a practical research with defined indicators and problems for a metropolis like Tehran. These indicators are introduced by the role that Tehran could actually and potentially have.

The most important practical face of this project is to give a visual and analytical point of view from the past and future of the city. This atlas could be a great source for future of urban management in Tehran. Also because of its simple and straight wording of texts and maps, and details about the indicators and analysis, it could be really interesting in case of urban development. Publishing and developing of this project, happened with cooperation of a large number of skilled masters and popular experts.

During the monitoring of information and data of this Atlas, our publishing department was able to modify and troubleshoot some of the statistics and information which
we had in the database center of Tehran.

The second Atlas was published in two volumes and one CD and the Atlas website was launched in September 2011. Tehran University presented the third proposal of Tehran’s atlas to municipality of this city. The target of third proposal was assessment of Tehran’s sustainability and to observe the growth of city itself and living in it. This project is a successful example of cooperation by Tehran Municipality and Iran’s academic and scientific communities. We hope with continuation of this cooperation we could achieve one of our biggest goals which is Monitoring of Tehran metropolis.

Key Dates
1997  The Proposal of Tehran metropolis first atlas
2010  Developing of second atlas was finished
2011  Atlas website was launched
2011  Appreciation of the Atlas of Tehran Metropolis in the 4th Research and Innovation Festival on urban management
Atlas Academic Council meetings
Atlas Academic Council meetings
SITUATION BEFORE THE INITIATIVE BEGAN

Tehran past its path with a great speed to become a metropolitan city with population of more than 8 million people and area of over than 700 square kilometers. These changes are continuing and city is subjected to qualitative and quantitative changes. Information and Statistics of Tehran metropolis at present and the changes due to the lack of integrated urban management is maintained by the responsible various organizations, according to its needs.

ESTABLISHMENT OF PRIORITIES

Tehran’s municipality considered necessary to give a clear and accurate image from Tehran metropolis to be a help for:
- Specialty recognition of contemporary Tehran
- Response to the necessities and the information needs of Tehran metropolis
- Correct decisions in the future
- Understanding the complex issues of Tehran metropolis
- To be a guide for urban managers and Scholar in urban planning and management scope

It was imperative that this tool could provide the possibility of monitoring in Tehran and create an organizational context for assessing the stability and quality of life in Tehran.

In 1997, Tehran’s municipality developed and produced the first Atlas of Tehran metropolis and chose Tehran University, because of its qualified related experiences as an assistant.

In 2010, second Atlas with a different proposal and more comprehensive and
FORMULATION OF OBJECTIVES AND STRATEGIES
The main goal of developing Tehran’s Atlas is to depict the last and valid information of Tehran metropolis. This Atlas contains all the related aspects to the urban management.

Guidelines to achieve this goal:
1- The considered indicators in the Atlas should be proportionate with a metropolitan and the important problems of a metropolis should be mentioned on it.
2- These indicators should be related to the international actual and potential role of Tehran metropolis.
3- This Atlas should be in the group of analytical atlases and should contain the last changes and images of Tehran.
4- The functional method of this atlas should somehow be defined so that experts and professionals could assist on developing of it.

MOBILISATION OF RESOURCES
One of the Statistic and information technologies of Tehran’s municipality responsibilities is to give public information, specially related information about Tehran. This organization was the producer and publisher of Tehran’s Atlas project and all the related costs have been provided by this organization. Because of all the related experiences University of Tehran was chosen as an assistant for this project, and this university continued its association for the second Atlas.
The third atlas’s proposal is presented by Tehran University which is under investigation by the municipality of Tehran. For Atlas developing a special council called Atlas Scientific Council was formed. They determined how the policies and general information for different chapters should be prepared and formulated. One of the greatest members of Atlas Scientific Council is professor Mohammad Hassan Ganji (Father of Iran’s Geography). He also was an active member in overseeing the Atlas project and the first chapter of Atlas (The Land) was produced and published under his supervision. The other members of Atlas Scientific Council are Tehran University’s faculty members and professors: Mrs. Masserat Amirebrahimi, Mr. Mohsen Habibi, Mr. Rahmatolah Farhoodi, Mr. Hassan Ali Faraji Sabokbaar, Mr. Ali Badri. For project implementation, 10 special committees were formed. Each of these committees were responsible for one chapter of this project. Responsibilities of each Committee, was entrusted to qualified and experts of that field. A special committee also formed for the spatial information and spatial data modeling. To increase the quality of the project, we tried to use the association of large numbers of the experts and professionals in this field. To achieve this goal we had lots of special and professional meetings.

**PROCESS**
The first Atlas was published in 1998 according to the public statistics in 1996 and because of the lack of statistical sources on those days; a great number of people were interested in it.
The second Atlas was published in 2010 according to the public statistics in 2006. It was developed for evaluating the transformation of the city during last 30 years and it contains these topics: The Land, Population and Immigration, Education, Employment and Activities, Dwelling, Transportation, Urban facilities and equipment, urban planning and quality of life.

Service description of the project was developed by the Scientific Council, in coordination with the monitoring team. Service Description was given based on existing divisions, namely: the domain and statistical blocks, regions and urban areas, organizational boundaries. Required data were collected from various sources. About the operation process, Some of the information was collected statistically and after that it was controlled and reviewed by the professionals. Some other information was gathered from the other projects and some of the numbers and statistics were developed and changed. The information and data of first Atlas was delivered by its administrator to the group. After the necessary processes and quality control and ensure of its accuracy, information and databases delivered to the experts and scholars to make a decision about how to use them.

Based on scientific groups and committees’ discussions, primary indicators in each of the relevant areas were collected. The title of indicators, data requirements, and methods of calculating, the desired output were compiled and edited by the group and delivered to the monitoring group.

The phase of collecting, processing and ... to the phase of mapping was conducted and the maps were delivered to the workgroups for analyzing.

For spatial data analysis, modeling of indicators, and presenting of information and analysis, geographical information system and other up-to-date software were
Sometimes the data transferring between the groups of Map Analysis and Data to map convertors was repeated continuously for gaining the best and most accurate result.

Finally, each map in the atlas has been brought with its analysis and calculation methods.

At the end of this process, appropriate plans based on cartographic standards and analytical indicators and coordination between different maps of each chapter, were prepared by the cartographic working group.

Tehran metropolis contains 9 chapters:

Chapter 1: The Land
Chapter 2: Population and Immigration
Chapter 3: Education
Chapter 4: Employment and activities
Chapter 5: Dwelling
Chapter 6: Transportation
Chapter 7: Urban facilities and equipment
Chapter 8: Urban management
Chapter 9: Quality of life

In chapter nine, to assess the quality of life, objective studies have been conducted in Tehran. 27 indicators, representing different aspects of quality of life, were converted to the four main factors:

Access to urban services and facilities, the quality of the social territory, quality of
The home page of Atlas of Tehran Metropolis’s website
Some pages of «Land of Tehran» chapter on the website
Some pages of «Urban Development» chapter on the website
Some pages of «Quality of Life» part on the website
Some pages of «Urban Facilities and Services» chapter on the website
Some pages of «Housing» part on the website
Population and migration Chapter
Population density in one of the routes leading to the market
housing and environmental quality.
The 27 index were extracted from related experience and were selected after compliance with Tehran’s conditions to access the information. This project was facing many problems for preparing the statistics and validation of them.

From those problems we could name:
1- Some of the information are considered confidential and access to them were difficult or impossible.
2- Some of the information and statistics were inconsistent with lots of errors and correcting them was very time consuming.
3- There were several databases. Lack of integration in urban management, statistics and information custodians won’t be comprehensive.
4- Interaction with various organizations of statistics and information was not an easy job to do. These organizations won’t easily share their information and data.

The Scientific Council of this project had a tendency to analyze the information and data in scale of districts in Tehran (the smallest divisions of the city). But this was impossible because:
- The Lack of sufficient data and information in this scale
- Uncertain boarders between the districts
- The Lack of administrative structure in districts

With these reasons it is easy to find out why information of this Atlas is in scale of territories and regions.
RESULTS ACHIEVED

1. The new Atlas of Tehran metropolis evaluated the transformation of the city during last 30 years and in it contains lots of challenges about Tehran’s urban management issues. In 9 regions, developments were monitored and provided in the form of maps and diagrams. A large number of professionals and skilled people were assist in this project with the Atlas Scientific Council.

2. The second edition of Atlas of Tehran tried to provide a more analytical content than the previous one, to be able to present functionality to scholars and professionals. The most important aspect of its application is to provide a visual-analytical image of the current and past status of Tehran metropolis. Urban managers and planners can make better decisions by understanding the differences and form a spatial vision of the challenges as well as points of strength and weakness in different areas of the city.

3. This atlas is an applied research. Different scientific indicators developed and used in such a way that can be used not only for scholars, researchers and urban managers but for all those who are interested in the remarkable transformation of Tehran metropolis. The simple wording of texts, maps and detailed diagram and sufficient explanation about the indicators and analyzes are an effective aid in this field.

4. In this atlas some new chapters, like quality of life in Tehran has been added.
Graduation ceremony of University of Tehran students
5- The final product of this Atlas has been published in 3 different formats in two languages (Persian and English): book, cd version and an online version. The Tehran's metropolis book has been published in winter 2010, in 334 colored pages (23.5cm * 32.5cm). Atlas’s website which contains the entire Atlas’s information and data has been launched in September.2011 with the address of: www.atlas.tiran.ir.
To producing all these products, high quality and standards were imposed. The reason of publishing Atlas in 3 formats was to increase the knowledge of Tehran’s citizens about Tehran metropolis by being user friendly.

6- Some of the information and statistics were inconsistent with lots of errors, such as some of the information from Iran’s database and statistical center. The managers of Atlas project had several meetings with Iran’s database and statistical center, with providing necessary information and documents, could amend some of the information and statistics of Tehran.

7- The developing group of second Atlas of Tehran presented the proposal of third Atlas. Tehran’s municipality is at present assessing financing and production of its data. The general approach of third Atlas is stability assessing of Tehran metropolis. Stability assessing and life quality in Tehran needs some additional data sets. The indicators would be such a way that the stability in Tehran could easily be monitoring. The main goal is to create an observatory organization in Tehran for a better urban management.
8- In a relatively short time that has passed since the publication of this Atlas, it achieved a good interaction with people and professionals. Lots of telephone calls for proposals and recommendations and appreciations have been made. Supreme Cultural Revolution Council with the information and communications technology of Tehran Municipality has held meetings about developing cultural Atlas of the country. 

The second version of Atlas was unveiled at Tehran University and in the Research Festival of 2011 was introduced and appreciated in the Research and innovation festival on urban management, 2011. Also in Asian metropolis’s conference in Istanbul, in March 2011, The Atlas was introduced.

SUSTAINABILITY

Financial: All costs of this project are financed by Tehran Municipality. We hope to provide a real picture of Tehran, could make a positive effect on Managerial decisions and could also prevent the money wasting on unnecessary projects.

Social and Cultural: in preparation of Atlas we tried to make the contents engaging and interesting and usable for the Tehran citizens and and transfer them worthy and practical knowledge about their city.

Environmental: In this Atlas providing of update and correct analytical information was effective on decision making and planning processes.

Organizational: The development process of first and second Atlas has led to
development of third Atlas which its approach is sustainability assessment in Tehran metropolis and the main goal is to providing the possibility of monitoring Tehran and to establish an organization to assess the sustainability and quality of life in Tehran.

LESSONS LEARNED

1- The statistic and information technology of Tehran’s municipality entrusted the development of Atlas to Tehran University, according to its experiences and existing of experienced teachers and related departments to the Atlas’s topic. Regular meetings of Council and the Working Group were held at Tehran University, department of Geography. Data were obtained from official sources. However if a discrepancy or lack of information and the necessity of using other information sources was felt, then the data would be obtained from various sources were subjected to qualitative assessment.

2- One of the major programs of scientific committees was to study the existing Atlases and compare them with the new Atlas. The Atlas presentation and cartography happened with the use of existing experiences. The other plan was to study analytical tools.

3- In this Atlas, special attention has been paid to cartography and how to display the information. One of the best science-related books was translated, which made a substantial contribution to the application of modern methods and up-to-dated cartography in the implementation of the Atlas.
4- In this project, cooperation between the municipality and the university was very successful and eventually caused an acceptable product. The project was on an appropriate monitoring process and detailed design from the first step. This matter has had an important effect in the suitability of this collaboration.

5- Naturally the experiences of the first Atlas were transferred to the second one. The continuation of projects caused a result beyond the expectations.

6- In Urban chapter of the Atlas, the information which were analyzed and developed to prepare a comprehensive plan of Tehran was used.

7- This experience came to believe that if there is an effort on urban management, urban observatory can be achieved. Also in this case, the help of proper cooperation between urban management and academic experts could led us to production of indicators which can be provided and be competitive in the global scientific and technical communities.

8- It is possible to eliminate defects and improvement of data, with the comments of specialists and experts from the Atlas website: www.atlas.tehran.ir or municipality of Tehran’s website : www.tehran.ir

**TRANSFERS**

Several cities in Iran are expanding and there are changing and their problems are become more complex. With presenting an image from Tehran, in which the indices of a metropolis are raised and analyzed, definitely will be affected on decision making and urban management of other cities.
RELATED POLICY/IES OR LEGISLATION
This project was supported by information and communication the statistic and information technology of Tehran’s municipality.
Some pages of Atlas of Tehran Metropolis's DVD Version
Some pages of Atlas of Tehran Metropolis’s DVD Version
Chapter 2: Population and Migration

Population distribution in certain age groups:

The population of Tehran is not only concentrated in the city but also in the surrounding areas. The city itself has a population density of about 22,000 people per square kilometer. The surrounding areas have a lower population density, ranging from 5,000 to 10,000 people per square kilometer. The population distribution is not uniform, with some areas having a higher concentration of people than others.

The age distribution of the population is also an important factor to consider. The age group 0-14 years old accounts for 25% of the population, while the age group 15-64 years old accounts for 70%, and the age group 65 years old and over accounts for 5% of the population.

The distribution of the population by age group shows that the city has a younger population compared to the surrounding areas. The age group 0-14 years old accounts for 30% of the population in the city, while it accounts for 20% of the population in the surrounding areas. The age group 15-64 years old accounts for 70% of the population in the city, while it accounts for 80% of the population in the surrounding areas. The age group 65 years old and over accounts for 10% of the population in the city, while it accounts for 5% of the population in the surrounding areas.
Some pages of Atlas of Tehran Metropolis’s DVD Version
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