

## ***Development of a SDI Conceptual Model for Municipal of Babol***

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### **Extended Abstract**

#### **Introduction**

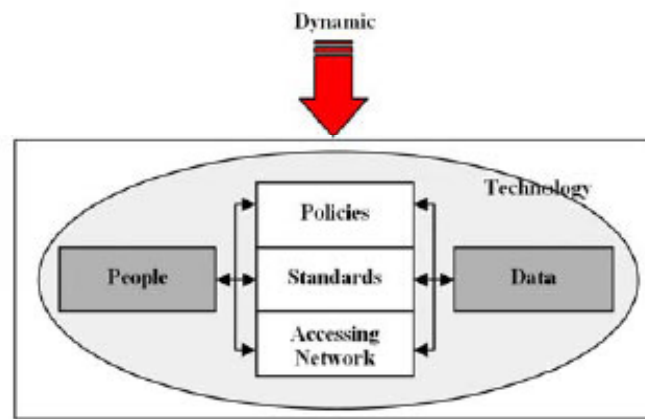
Spatial data as one of the most important and most critical factors in decision-making and planning in life are discussed. For this reason, many needs, objectives and activities of different organizations, when it is possible that access to appropriate data integration is possible. One of the major problems today in most organizations, we are faced, lack of proper management of data and ignore its role in improving management and planning processes are. This issue, especially in small local organizations such as municipalities, as the main executive body in the city level, which is faced with lots of spatial data, is enormous. Regarding this issue, and to appropriate management spatial information and improve decision making, planning and implementation within the municipality, is required to, all existing problems that are often technical, economic, political and social aspects, will be exact identified and Rising. In this regard, spatial data infrastructure (SDI), as the activity in context of spatial data management, is able to use their model as a framework to resolve existing problems in context of spatial data management in the municipality and provide the necessary context information. In this article, in the context of a case study project in Babol municipality, various problems for developing Organizational SDI were investigated and solutions for resolving the problems were proposed.

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### Methodology

SDI is collection of technologies, policies and institutional arrangements that facilitate the availability of and access to geographic data. The SDI provides a basis for spatial data discovery, evaluation, and application for users and providers within all levels of government, the commercial sector, the non-profit sector, academia and by citizens in general. To make an SDI functional, it must also include the organisational agreements needed to coordinate and administer it on a local, regional, national, and or trans-national scales. Development of Iran SDI was formally started from 2005 according to the enactment of the parliament in 2004. Referring to the enactment, a high level document entitled "the NSDI Special Development Plan Document (NSDI-SDPD)" was prepared and then approved by the ministerial board. The document includes mandating statements for NSDI development. It also clarifies the Iran NSDI vision, core components, coordinator, and secretary as well as main stakeholders. Figure 1 shows the general Iran SDI model including its core components and their relationship with each other. The general model illustrates that, by better use of technologies, proper policy-making, standardization and creating accessing networks, the relation between people and data can be facilitated (Figure 1). NSDI-SDPD has also accepted the hierarchy nature of SDI for Iran, including the horizontal and vertical relationships between different levels of SDI from local to national.



**Fig 1.** SDI general model of Iran

Therefore, the most important components of SDI are people, policies, standards, accessing Network and data. With respect to this framework, a research study in municipality of Babol has been designed with an aim to develop a system based on sectorial-SDI and present a conceptual model for SDI to facilitate the development of an infrastructure for municipality management.

Based on subject of research, we review and evaluate the current status of municipalities, from an SDI point of view, was performed. through questionnaires and interview with specialists and experts necessary data were collected. After checking, the data was analyzed by UML and RUP methodology and make a conceptual model for SDI of Babol.

## **Results and Discussion**

Babol is a big city in north of Iran. Municipality of Babol include some sectors: Mayor's Office, Construction and Urban Development Affairs, Urban Services, Administrative & financial affairs. To this list are added numerous departments, organizations, and affiliated companies that produce and use spatial data.

After that, with regard to current status of Babol municipality and identifying problems and existing issues, Babol municipality's SDI conceptual model, was developed. At this stage, relying on Iran national SDI conceptual model, and considering to the features and specifications of Babol municipality, SDI components were identified and important issues related to each component, with more detail were analyzed. At the end, a brief implementation, in order to share data required for multiple units of Babol municipality, which was the previous stages, have been performed.

### **Assessment of spatial data management at municipal of Babol:**

#### ***Social and technical assessment***

As an assessment framework was used a model of organization behavior. The main feature of this model is possibility of simplifying an organization such as city of Babol. At this vision, we divided it to three levels: individual, group and organization.

#### ***Assessment of Data standpoint***

Data were analyzed from four aspects: Availability, Accessibility, Applicability and Usability. Then was proposed data and maps required municipal units.

#### ***Development a conceptual model SDI for city of Babol***

Based on Iranian model of SDI, the main components were investigated including organizations and people, network access, standards and policies.

## **Conclusion**

Accordingly, in this thesis, review and evaluate the current status of municipalities, from an SDI point of view, was performed. After that, with regard to current status of Babol municipality and identifying problems and existing issues, Babol municipality's SDI conceptual model, was developed. At this stage, relying on Iran national SDI conceptual model, and considering to the features and specifications of Babol municipality, SDI components were identified and important issues related to each component, with more detail were analyzed. At the end, a brief implementation, in order to share data required for multiple units of Babol municipality, which was the previous stages, have been performed.

***Keywords: Spatial Data Infrastructure (SDI), Municipality of Babol, Geographic Information Systems, Enterprise GIS.***