

# BOOK REVIEWS

## GIS Diffusion

### The Adoption and Use of Geographical Information Systems in Local Government in Europe

by Ian Masser and François Salge  
GISDATA 3, Series Editors  
Taylor & Francis Ltd. 1996  
ISBN 0-7484-0495-3

The world of GIS has expanded dramatically in the last two decades. This is due in part to the availability of GIS software, to decreasing costs of hardware, the availability of digital geospatial data and the exponential growth in the Internet. The GIS community realized that GIS represented a rich medium and that their large user base held the potential to improve system interoperability, providing better means for the dissemination and sharing of geographic information (GI) and applications.

Geographic Information (GI) has the ability to help meet the socio-economic challenges stressed in the current debate on the Information Society. GI has rapidly become indispensable strategic information both for earth management, with all that implies, and for socio-economic development.

In territorial planning and management, the decisional process of land use transformation and its environmental consequences can integrate the new methods and management tools to build decision support systems which associated with the use of on-line technology, will provide a basis for interoperable and transparent cross-disciplinary applications using GI. In a few words, GIS are used as a key technology for decision support in all branches of human activities operating with spatial location of surveyed objects.

In the framework of such a new approach, the experiences of GI community surprise by the discovery that "there is not enough knowledge about Information Society" and the trend is towards "understanding that it is necessary to deal with the problems of GIS and digital cartography in a much wider context".

This volume is the first out of a new series to be produced within European Science Foundation

(ESF) Scientific Program on Geographic Information Systems: Data Integration and Database Design (GISDATA).

The level of GIS industry makes it necessary to study the diffusion of this technology and its impact on society as a whole. This is because the technology has the potential to radically change the use of geographic information in a wide range of circumstances and one must recognize that not all of these changes will be beneficial.

Structured as it is in four Parts: *Reflections on GIS diffusion research*, *GIS in local government in five European countries surveyed using a similar methodology*, *GIS in local government in other four European countries*, *Evaluation*, and thirteen Chapters with more than twenty authors, this book presents and analyses the findings of research on the diffusion of GIS in local government in nine European countries: Great Britain, Germany, Italy, Portugal, Denmark, Greece, France, Poland, the Netherlands.

The term "diffusion" refers the process during which technological innovations such as GIS are being adopted and taken up by various user groups.

The book builds on the findings of a NATO Advanced Research Project meeting specifically dedicated to "Modeling diffusion and use of geographic information technologies". The project developers interrogate about the following :

1. What can GIS researchers learn from research elsewhere on organizational behavior and technological innovation?
2. What are the main features of the GIS diffusion process?

3. To what extent can the adoption and utilization of GIS be facilitated or impeded by the institutional and organizational contexts within which it takes place?
4. What mechanisms might be used at the regional, national and international levels to facilitate the diffusion of GIS?

Ian Masser and Massimo Craglia edited the book because they fully realised its success in approaching the issues above.

The **first Part** of the book addresses some of the broader theoretical issues involved in GIS diffusion research. The basic objective of this contribution is to counter the pro-innovation bias in most of GIS literature and demonstrate that GIS diffusion has negative as well as positive impacts.

The **second Part** includes five case studies which make use of a similar survey methodology, whereas the four case studies in the **third Part** have been chosen to open up alternative perspectives of the diffusion process in local government.

The **last Section** is reserved to a comparative evaluation of GIS diffusion in local government in nine countries, based on the experiences described in the book.

The comparative evaluation proceeded on three stages:

- the construction of a profile for each country, which summarizes the distinctive features of each national experience;
- these features are compared with those of the other eight countries within a common analytical framework;
- the investigation of the extent to which a typology can be deduced on the basis of the differences observed between countries.

The comparative evaluation revealed some of the essential similarities and great differences existing between GIS diffusion in local government in the sampled European countries. "They show that in all the countries surveyed GIS are a limited amount of operational experiences which have been built up to substantiate the claim that GIS implementation will lead to improved information processing".

Being knowledgeable of the GIS industry advances and of the extent to which it has got dominated by a relatively small number of large

users, it is surprising to find that relatively little systematic research has been carried on the development of the geographic information services industry itself or the diffusion of geographic information technologies in key sectors such as local government. There is a strong national dimension attached to local government which is reflected in the expectations that people have with respect to local authorities, the tasks that they carry out and the professional cultures that have come into being to support them.

As an attentive and subject-captured reader of the book as this reviewer was, she would be awfully sorry if missing the occasion of inviting new readers to its indubitable message, that is :

1. the larger availability of GI is also creating an opportunity for emerging application areas in both public and private sectors;
2. the development scenarios for the new millennium show GIS as a key issue in the emergence of global information society;
3. the studies about the surrounding use of GI are really important to better understand the market, particularly since GI exhibits a strong need to integrate the data and expertise of public and private sectors into a market place for which behavior is strongly influenced by historical situations, politics and the strong influence of the external benefits to society-from better use of GI and the allied notion of public service;
4. the strategic value of GI gets more and more recognized by many national governments and institutions as it is by European Commission. The importance of this book is that it gives the first systematic account of the diffusion of geographic information and also evaluates its handling technologies with one of their main users across Europe;
5. globally, the promotion of GIS and discussion of related issues such as diffusion, levels of access to information, national GIS "culture", data policies, legal aspects, are fundamental to allow the growth of a more democratic citizen oriented society.

The authors' visionary commentaries have recently been proved by the conclusions of the GIS Brno'98 Conference.

**Angela Ionitã**