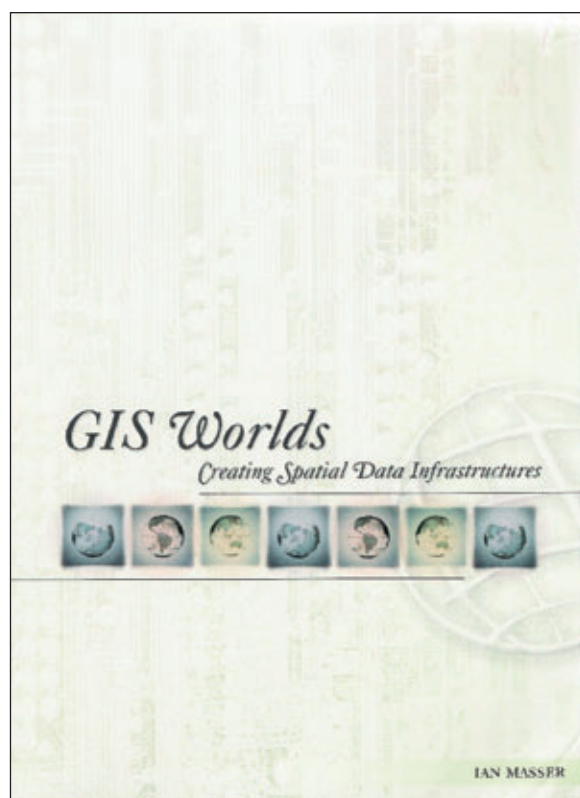


GIS Worlds: Creating Spatial D

Balanced Overview of Developments in SDIs

Over the last 15 years a lot has happened in the GIS-world at a more conceptual level, but so far this is hardly reflected in the existing literature. Ian Masser has taken it upon himself to write a book about the emergence of Spatial Data Infrastructures: "GIS Worlds - Creating Spatial Data Infrastructures", published by ESRI Press in 2005.

By Robin Wevers



*GIS Worlds -
Creating Spatial Data Infrastructures*
By Ian Masser
ISBN 1-58948-122-4
Printed by ESRI Press, 2005
312 pages \$ 49,95

Introduction

The book provides an overview of the developments in Spatial Data Infrastructures (SDIs) over the last 10 to 15 years. Ian Masser became involved in matters relating to geographic information (GI) policy and spatial data infrastructures (SDIs) in the late 1980's. He carried out a comparative evaluation of national spatial data infrastructures in a number of countries. From 1999 to 2003 Masser was president of the EuroGI (European Umbrella Organization for Geographic Information) and from 2002 to 2004 he was president of the GSDI Association (Global Spatial Data Infrastructure). These and several other activities make Masser more than qualified to present this book.

The target audience for the book is key decision makers at all levels of government and in the private sector. People in the trade business can put this book on their bosses' desks to encourage them to think more strategically about GI and GIS. According to Masser one of the problems is that most of the literature on the subject tends to be very technical. This deters politicians and senior management executives from reading about this subject and consequently taking action.

GIS-Worlds

Most books about GIS-related topics look attractive as a result of many illustrations. But "GIS-Worlds - Creating Spatial Data Infrastructures" is a book about concepts and about strategic developments, not about

the day-to-day use of GIS-systems and data. Thus this book is less suited for appealing illustrations. Nevertheless ESRI Press and Masser have succeeded in producing an attractive-looking book. The number of illustrations is limited, but by frequently presenting information in tables and descriptions in boxes the overall impression of the book is quite pleasing. Furthermore Masser proves to have a way with words and succeeds in getting his message across.

What is this message? When asked the author says: "I think that the most important message from my book is that SDIs are emerging. This shows that governments throughout the world are beginning to think more strategically about the management and exploitation of their geographic information assets. This will have some profound consequences for the way both public and private sector organizations will operate in the future. For example, the notion of data sharing features prominently in many statements about GI (and also IT in general) but there are few examples of data sharing in practice."

Diffusion of SDIs

Let's go back to the contents of the book. Masser starts his journey with the diffusion of SDI over the world, followed by the evolution and implementation. For his analysis of the diffusion of SDIs the author uses the well-known model of Everett Rogers, originally developed for the diffusion of hybrid corn species in Iowa (1943), but since that time widely applied in different types of innovations. Rogers' model describes the diffusion by distinguishing between innovators, early adopters, early majority, late majority and laggards. Every group has its own characteristics. According to the model the innovators account for about 2.5 per cent of the population. Considering there are about 200 countries worldwide this amounts to five countries. Similarly about 27 countries make up the population of the early adopters. The distinction between the two is not always obvious. Masser distinguishes and analyses eleven countries that are in the front field of SDIs: Australia, Canada, Indonesia, Japan, Korea, Malaysia, the Netherlands, Portugal, Qatar, United Kingdom and the United States. His analysis highlights the diversity of

Data Infrastructures



Ian Masser, author of the book.

For a definition of a Spatial Data Infrastructure Masser refers to the Global Spatial Data Infrastructure website (<http://www.gsdi.org/>):

“Aspatial data infrastructure supports *ready global access to geographic information*. This is achieved through *the coordinated actions of nations and organizations* that promote awareness and implementation of complimentary policies, common standards and effective mechanisms for the development and availability of interoperable digital geographic data and technologies *to support decision making at all scales for multiple purposes*. These actions *encompass the policies, organizational remits, data, technologies, standards, delivery mechanisms, and financial and human resources* necessary to ensure that those working at the global and regional scale are not impeded in meeting their objectives.”

(Italics from Masser).

Four key concepts underpin all SDIs:

- Maximize the use of geographic information;
- A need for a coordinated action on the part of governments;
- SDIs must be user-driven;
- Implementation involves a wide range of activities regarding technical, organizational and financial issues and human resources.

these countries in size and population: from 10 million inhabitants (Portugal) to 285 million (USA). As for gross national product per capita and economic status 9 out of the 11 innovator countries fall in the high-income range according to the World Bank's ranking system.

Several Levels

Masser distinguishes several levels of SDI: sub-national, national, regional and global, and gives examples of each level. How complex the evolution of SDIs can get, is illustrated by the description of the developments in Australia, Canada and the USA. In these countries a multilevel SDI evolved with a national framework, complemented with regional SDIs. Since the implementation varies from region to region, the SDI that emerges from this process is a collage of similar but often quite different elements. Analysing the early majority reveals a difference with the early adopters and innovators: most early majority countries have low-income levels. An important aspect of the emergence of the early majority is that they provided much of the interconnectedness in the interactions that take place between similar countries. An important player in this field is Eurogi. Eurogi is the only regional body that is independent from any national or intergovernmental body. The exact objectives of Eurogi have been redefined over time, but essentially Eurogi tries to further the interests of the

European geographic information community and stresses the importance of increasing the use of geographic information for many purposes.

Benefits

“GIS-Worlds - Creating Spatial Data Infrastructures” is descriptive in nature and elaborates about the diffusion, evolution and implementation of SDIs. The book only briefly mentions benefits from SDIs. The benefits that the various countries hope to achieve vary slightly. The executive order of President Clinton (USA, 1994) phrases it as follows: “to promote economic development, improve our stewardship of natural resources, and to protect the environment”. The National Geographic Information System in Korea recognizes SDI as one of the most fundamental infrastructures required in promoting national competitiveness and productivity.

“GIS-Worlds – Creating Spatial Data Infrastructures” does not explain how and why SDIs are thought to bring about these benefits. When asked Ian Masser explains that there actually is a gap in current research. As yet very little systematic work has been done in this respect. The Joint Research Centre of the European Commission (JRC) has recently organized a workshop on this topic.

Conclusion

All in all Masser has succeeded in giving a balanced overview of the developments of spatial data infrastructures. The book encourages its readers to think strategically about geographics information. Being highly conceptual the book will not make it to the bedside table, but it is a valuable descriptive work, which will leave its readers well-informed and able to participate in discussions about ongoing developments.

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More information can be found at:

http://www.esri.com/news/releases/05_2qtr/ian-masser.html

<http://www.gsdi.org>

<http://www.eurogi.org>

More information about INSPIRE can be found in *GeoInformatics 2005-5, 2005-7 and 2005-8*.