

Maps and the Internet. M.P. Peterson, ed. Elsevier, 2003. 468 pages + CD-ROM, 181 figs, 9 tables, Index. Hardcover, US\$150, ISBN 0-08-044201-3.

Maps and the Internet is the latest book edited by Michael Peterson from the University of Nebraska at Omaha, USA. Peterson is the Chair of the International Cartographic Association's (ICA) *Commission on Maps and the Internet* and this book contains a collection of research and development papers from leading international Commission participants. The goal of the ICA Commission is to promote cooperative international research as a means of solving scientific and applied problems relating to maps and the Internet and this book reflects this goal by providing an introduction to the wide range of research being undertaken by Commission participants. Published on behalf of the ICA, the chapters in *Maps and the Internet* represent the work of over 30 authors from 16 different countries.

The book is structured in 4 parts with a total of 28 short chapters covering a diverse range of topics relating to maps and the Internet. Whilst there is a limit to the amount of detail each chapter can provide, the selection of themes covered is highly relevant and each chapter is accompanied by a comprehensive list of references for those readers who wish to learn more. The greatest strength of the book is that it provides an excellent summary of the current state of knowledge and international research being undertaken relating to maps and the Internet as well as identifying the many research holes.

Part 1 – *Introduction and Contemporary Issues* – sets the scene by outlining the many types and uses of maps on the Internet. The development of mapping and the Internet, the characteristics of web maps and the current use

of maps for tourism marketing and as a means of delivering interactive census and statistical data are all covered. A particularly interesting chapter for any reader involved in map education discusses geographic information literacy and a course that aims to equip students with the skills to critically use web mapping resources. Another chapter addresses privacy issues and the role of the web map as a means of government and social control. The chapters reinforce the message that a lot more R&D is required to make the Internet a more effective medium for distributing maps.

Part 2 – *Technical Development* – focuses on the technical aspects associated with delivering maps via the Internet. Technical development using Java, XML, SVG and 3D visualisation technologies is covered. The use of peer-to-peer and mobile agent techniques for serving GIS functionality and for sharing data and software are discussed as well as the development of dynamic, machine readable cartographic rules as a means of establishing distributed cartographic knowledge bases. Chapter 16, although possibly more appropriately placed in Part 3, will be of interest to any readers involved with the development of 3D visualisation applications. This chapter discusses the results from user focus groups and usability studies that were employed to investigate techniques for optimising wayfinding in desktop geovirtual environments and presents some very useful findings.

Part 3 – *Applications and User Issues* – discusses specific applications that are being developed by international researchers. In more recent years, research and development has focused not only on the delivery of interactive maps and GIS via the Internet but on the use of the wireless Internet, and the development of public participation applications and web-based virtual environments. Several chapters discuss the use of the mobile Internet, associated concepts and knowledge and applications that have been

developed using PDAs and mobile phones. One chapter looks at the integration of abstract map representations of the environment within virtual reality (VR) displays whilst another explores the use of *QuickTime* tools for delivering VR maps. The review of thematic maps on the Web for public participation purposes, in Chapter 21, discusses many of the related deficiencies and the fact that of those applications studied, the majority do not make use of the potential of the Internet. Part 3 also covers the design and use of maps for public transportation, the creation of a student atlas of Russia, and the development of several multimedia and GIS databases for environmental management purposes.

Part 4 – *Theoretical Development* – consists of three chapters that discuss conceptual issues relating to cartography. Fraser Taylor argues that the increasing use of maps and the Internet requires a new paradigm for cartography. He outlines a new definition – cybercartography – and looks at the potential of cybercartography for the new information economy. Brodersen discusses modelling the visualisation of Internet maps and presents a communication model and a method for assisting cartographers with the development of map products that maximise information transmission. The final chapter, authored by Michael Peterson, reviews past and present research in cartography and how such research relates to the new research areas presented by the Internet. This provides an excellent conclusion to the book, identifying a number of areas for future research.

The book is accompanied by a CD-ROM that is structured according to each of the 28 chapters. All figures in the book are provided at a

larger scale on the CD. This is particularly useful for screen dumps of application interfaces which, while legible in the book itself, can be more closely examined, and mostly in full colour, on the CD. The CD also contains hyperlinked references for each chapter including links to applications and prototypes discussed in the chapters so that readers can explore these for themselves. Various resources are provided. For example, Chapter 12 discusses the use of SVG for mapping applications and the associated section on the CD provides a summary of, and links to, a number of SVG viewers whilst the resources associated with Chapter 7 enable download of a cartographic applet developed by the authors.

In conclusion, *Maps and the Internet* outlines a range of thought-provoking concepts and interesting research projects and provides an excellent summary of who's doing what, where. This book will be of interest to any researchers and developers working on mapping applications for the Internet. The book is also recommended as an excellent addition to any library and a very useful resource for university courses in cartography, geography, geomatics and related areas; although a price tag of US\$150 will limit purchases by undergraduate students. Readers gain an understanding of many of the theoretical issues relating to the creation of maps and other spatial representations for delivery via the Internet, as well as exposure to the work, and products developed by, a wide range of international researchers.

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