



development of the Canadian Geographic Information System—the first computerized GIS. Now in its fourth edition, *Thinking about GIS* has been updated to reflect current trends in GIS technology. The fourth edition also features updated case studies, exercises, as well as a video DVD featuring footage of Tomlinson's course on Planning and Managing a GIS from the 2010 ESRI International User Conference. The foreword, written by Jack Dangermond (President of ESRI), promotes Tomlinson's emphasis on the planning process as his ultimate contribution to the field of GIS—aside from his significant contribution to inventorying Canadian lands in the 1960s. Dangermond specifies that this book is for two kinds of managers; those with the technical background (i.e. those responsible for the implementation of GIS projects) and those without (i.e. senior managers who oversee GIS projects)—although he insists that the book is also appropriate for the GIS student.

This book is very well organized with each chapter devoted to a different aspect of the GIS project planning process. It is in the introduction that Tomlinson first emphasizes the importance of sound decision-making based on a solid foundation of rigorous GIS planning. The importance of such meticulous planning is something he endorses, largely based on his years of

proven experience working as a consultant for numerous successful GIS projects of various scales. Chapter 1: "GIS: The whole picture" and Chapter 2: "Overview of the method", ease the reader into the GIS planning process, emphasizing the big picture, while introducing the reader to key concepts such as data types, error types, and common GIS tools. Chapter 2 also introduces the nine steps involved in a successfully planned and implemented GIS project. These nine steps comprise the remaining chapters as follows: Chapter 3: Consider the strategic purpose, 4: Build the foundation, 5: Conduct a technology seminar, 6: Describe the information products, 7: Consider the data design, 8: Choose a logical database model, 9: Determine system requirements, 10: Consider benefit-cost, migration, and risk analysis, and 11: Plan the implementation. Some chapters may prove too detailed for the novice GIS specialist, such as the in-depth discussion of architecture requirements in Chapter 9 or the overview of benefit-cost, migration, and risk analysis in Chapter 10. However, such chapters may act to motivate or inspire the novice reader for future projects or for those current projects where they may be involved in a non-managerial GIS role. The book also features extensive appendices, including detailed GIS job descriptions, network design and planning suggestions, as well as several documentation templates (the latter is also available on the supplemental DVD). The back of the book also includes a GIS glossary of key concepts.

Thinking about GIS, 4th Edition is a valuable reference tool for those who are involved in GIS project planning and implementation on some scale; whether a large-scale project in the initial planning stages or a smaller, pilot project whereby the reader can pick and choose the chapters appropriate to the needs. The book also features numerous templates such as sample Information Product Descriptions (IPDs) and a GIS dictionary which may prove as a valuable resource for non-GIS specialists involved in the project. Of particular use to GIS managers looking to implement a new or updated GIS, are the chapters devoted to data and architecture requirements (including detailed cost-benefit analyses). The book also features an abundance of concepts and practices that

are critical to any GIS project, such as the importance of determining error tolerance, maintaining proper data standards (including naming), potential data sources, as well as knowing the appropriate scale for maps produced during the project. Tomlinson is also careful to steer clear of favouring any GIS software package in his discussions of software requirements and in the detailed case studies provided throughout the book.

Tomlinson's years of experience on GIS projects are evident as he offers insider hints throughout the book, such as the importance of keeping upper level management informed throughout the planning process—as well as obtaining their 'sign-off' on project planning documents in order to avoid surprises down the road. His emphasis on the planning process and the importance of considering all avenues without delay (instead of paying for it later) cannot be overstated—one would also assume, as a direct result of his knowledge of those less-successful GIS projects. Aside from the importance of the planning process, in *Thinking about GIS, 4th Edition* the emphasis is also on adequately trained GIS professionals and their roles and responsibilities in the GIS project—as Tomlinson highlights, "A GIS is only as smart as the person or people behind it".

AMY BARKER

Being an Intelligent Client. A guide to successful commissioning and managing of land and engineering surveys, by Richard Groom, PV Publications Ltd, 2B North Road, Stevenage, Herts SG1 4AT UK, ISBN 0 946779 99 6, e-book, £9.95

In his book, *Being an Intelligent Client*, Richard Groom provides an introduction and overview of the responsibilities of the client and the survey contractor. The importance of

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the client-contractor relationship is discussed insofar as it affects the successful completion of a project. In addition, there are explanations on survey methodologies, techniques and equipment.

This book is recommended reading, not just for clients hiring land surveyors, but also for pupils articling to become professional land surveyors as well as land surveyors themselves. Groom's three decades of experience lends strength to the many gems and words of wisdom gleaned from working as a survey contractor on a variety of European projects. The author's experience as a Technical Editor for *Geomatics World* reveals his ability to keep the material concise, informative and enjoyable to read. The book may not be a technical survey text or manual, but from the material presented it would be relatively easy for anyone to prepare a comprehensive checklist on any of the many discussed categories of surveys. Such a comprehensive checklist could then be used as a ready reference.

The shared responsibilities of client and contractor in completing a project successfully are discussed in depth within the book. A broad explanation of most survey methodologies provides the client and articling pupil with enough detail that either can delve

into the technical aspects by following up with one of the references listed in the back of the book.

The principles of surveys discussed within the text are divided into broad categories as listed below, with each category broken into further topics. The categories are Survey Control, Detail Surveying, Remote sensing from air and space, Remote sensing from ground-based observations, Underground Utilities and Application Surveys.

The author recommends that the client and the contractor deal with problems as they occur rather than waiting for the end of the project. Successful projects require ongoing contractor-client communication throughout the project, as well as genuine teamwork and cooperation between the survey contractor and the client. The method of communication and nature of the communication are contingent on the type of project. As well, the quality of communication helps accumulate trust in the client-contractor relationship.

The author goes on to explain how a client can transition work between an experienced retiring contractor and new less experienced contractors. While there may be some pitfalls in the transition, there may be rewards as well. The client is cautioned that the tendering process can make a project susceptible to an undesirable contractor who can easily present themselves well on paper. Fortunately, the author describes a few techniques the client can use to mitigate or eliminate the risks of hiring an unqualified contractor.

Groom outlines the risks related to the survey component of a project. He emphasizes that the risks far exceed the amount of the survey contract thus requiring due diligence in the client's involvement. The author outlines a variety of contracting methodologies a client can use in respect of the survey contract to mitigate the risks. The consequences of a poor survey can have far reaching consequences, beyond the completion of the project and even well into the future. Even a good survey can be set up for failure without adequate planning; fortunately Groom outlines several survey-related problems that can be handled through advanced planning.

The importance of the terms, conditions and specifications in the contract are

highlighted along with how these are supplemented by the standards of good practices, and codes of ethics of the professional bodies. The different forms of contracts are described, along with the responsibilities and duties of each of the parties to the contract. Each of the contracting techniques is described in terms of their associated risks and burdens on the parties. A tendering point rating system and other contract decision criteria are discussed in terms of pitfalls and benefits. Drawn from his years of experience in describing the requirements of a survey contract, Groom contributes the benefits and risks of the various types of contract payment schemes.

The author expresses the importance of the contract having the survey processes described in addition to having the accuracy and product requirements outlined. As well, Groom discusses the requirement for precision and accuracy along with the nature of errors and the manner in which errors are distributed among the observations.

Limits of liability are examined within the book along with the requirements for insurance for survey contracts. Other aspects of the survey contract are discussed in terms of environment, transportation, discrimination, the importance of receiving a copy of all survey records including a contract map, as well as details respecting the control monuments. Ratios of the costs of the survey to the accuracies of the survey are also discussed.

Groom outlines many recommendations for project management. He provides many valuable tips for clients contracting surveyors. In reading this book one can readily discover exactly what it means when there is a large spread between the highest and lowest contract quotations, as opposed to a narrow spread. Above all, the subject matter contained in the book provides the client with an outline to successfully and effectively manage a survey contractor. □

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