Preface

Geographic information systems (GIS) has come a long way as a discipline since its humble beginnings in the 1960s. Today the technology is well developed, and there are strong techniques and methodologies for scientific and technical project implementations. In contrast to the maturity of GIS technology, the related business-based return on investment (ROI) aspects are much less well developed. We have found that there are very few examples of the measurable business benefits delivered by GIS projects, and that there is no standardized technique for estimating the value or return on investment of using GIS within organizations.

Although executives are always faced with pressure to justify their expenditures, in recent years, given the number of high-profile economic and accounting offenses, there have been increasing global and local demands to improve accountability, business efficiencies, competitive advantage, and resource utilization. As a result executives are seeking more sophisticated approaches for prioritizing and targeting investment in GIS technology, and for proving how and when that investment will deliver tangible benefits to their organization.

It is important to recognize that ROI calculations are only one component of a complete process; delivering on the benefits expected in a consistent and complete manner is equally important. To prove the business case for GIS, organizations must be able carry out the following activities effectively: link the business benefits sought via the GIS initiatives to the organization’s strategic goals and objectives; build a community of GIS advocates across the organization, moving beyond a single department and into the enterprise; ensure the program is business-led, and not technology-driven; and consistently deliver benefits through a well-structured and well-governed program that seeks to deliver value, not applications.

This book sets out to develop a standardized methodology for calculating the business value of GIS projects. The originating methodology was refined over many years by PA Consulting Group, Inc., a leading international firm of management consultants, and
applied by them across a number of disciplines. We use a mixture of tried and proven management science methods, adapted to perform in the context of GIS projects. As such, the intended user of the methodology is a GIS professional manager, business architect, system analyst, etc.—who wants or needs to develop a compelling case for introducing or expanding the use of GIS within their organization. We assume only that the reader has knowledge of GIS, and a basic understanding of business concepts and techniques.

We introduce a 10-step process for completing a comprehensive study, from project inception to a compelling business report. The reader is guided carefully through the process, and each step includes an extensive explanation, documentation, and a series of electronic templates used to collect, manage, analyze, and present the key data elements and ideas.

The approach focuses on six key topics that we believe are critical to creating a defensible position on the value of GIS for any organization: demonstrate the real business value; determine the specific costs; estimate the time frame for delivery of benefits; understand the resource requirements; define the governance and management; and calculate the return on investment. This is accomplished by addressing the primary questions generally asked by senior executives when confronted with a request for funding programs of this nature: Why invest, or reinvest, in GIS technology? What is the level of investment needed? When will the benefits be delivered? Who is going to deliver these benefits, and what resources are required? What is the proven financial case—does the investment in GIS provide the financial or other value to make it worthwhile?

The book begins with an overview of our approach for measuring business value. It outlines the 10-step methodology and describes the structure of the book. It also introduces a case study that runs through every chapter. The case study is a fictitious city municipality that was intentionally chosen because it is broad enough to cover a range of commercial, environmental, governmental, and utility business issues. Each of the subsequent chapters uses a common organizing frame for discussing the steps in the ROI methodology. The tasks for each specific step are first described, using examples for illustration, followed by a discussion of how the reader will carry out the tasks. The tasks essentially involve creating a series of documents based on the digital templates provided. Finally, the relevant case study material is presented.

This is very much a hands-on approach. All the materials described in the book are available on an accompanying Web site (http://gis.esri.com/roi). This site includes digital versions of all the chapters, templates, examples, and other miscellaneous supporting materials. There is also a reader discussion list that can be used to obtain insight from others about their experience in implementing the approach.
The methodology is fact-based and benefits focused. In its design, we have tried to make it as robust, objective, and repeatable as possible. It is our hope that by creating a relatively easy-to-use and standardized methodology, we will encourage organizations to create and share compelling ROI-based case studies that show how GIS can create business value for an organization.

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