Foreword

Data mining has developed rapidly and has become very popular in the past two decades, but actually has its origin in the early stages of IT, then being mostly limited to one-dimensional searching in databases. The statistical basis of what is now also referred to as data mining has often been laid centuries ago. In corporate environments data driven decisions have quickly become the standard, with the preparation of data for management becoming the focus of the fields of MIS (management information systems) and DSS (decision support systems) in the 1970's and 1980's. With even more advanced technology and approaches becoming available, such as data cubes, the field of business intelligence took off quickly in the 1990's and has since then played a core role in corporate data processing and data management in public administration.

Especially in public administration, the availability and the correct analysis of data have always been of major importance. Ample amounts of data collected for producing statistical analyses and forecasts on economic, social, health and education issues show how important data collection and data analysis have become for governments and international organisations. The resulting, periodically produced statistics on economic growth, the development of interest rates and inflation, household income, education standards, crime trends and climate change are a major input factor for governmental planning. The same holds true for customer behaviour analysis, production and sales statistics in business.

From a researchers point of view this leads to many interesting topics of a high practical relevance, such as how to assure the quality of the collected data, in which context to use the collected data, and the protection of privacy of employees, customers and citizens, when at the same time the appetite of businesses and public administration for data is growing exponentially. While in previous decades storage costs, narrow communications bandwidth and inadequate and expensive computational power limited the scope of data analysis, these limitations are starting to disappear, opening new dimensions such as the distribution and integration of data collections, in its most current version "in the cloud". Systems enabling almost unlimited ubiquitous access to data and allowing collaboration with hardly any technology-imposed time and location restrictions have dramatically changed the way in which we look at data, collect it, share it and use it.

Covering such central issues as the preparation of organisations for data mining, the role of data mining in crisis management, the application of new algorithmic approaches, a wide variety of examples of applications in business and public management, data mining in the context of location based services, privacy issues and legal obligations, the link to knowledge management, forecasting and traditional statistics, and the use of fuzzy systems, to summarize only the most important aspects of the contributions in this book, it provides the reader with a very interesting overview of the field from an application oriented perspective. That is why this book can be expected to be a valuable resource for practitioners and educators.

Gerald Quirchmayr, professor
University of Vienna, Austria
Department of Distributed and Multimedia Systems

Gerald Quirchmayr *holds doctors degrees in computer science and law from Johannes Kepler University in Linz (Austria) and currently he is Professor at the Department of Distributed and Multimedia Systems at the University of Vienna. His wide international experience ranges from the participation in international teaching and research projects, very often UN- and EU-based, several research stays at universities and research centers in the US and EU Member States to extensive teaching in EU staff exchange programs in the United Kingdom, Sweden, Finland, Germany, Spain, and Greece, as well as teaching stays in the Czech Republic and Poland. He has served as a member of program committees of many international conferences, chaired several of them, has contributed as reviewer to scientific journals and has also served on editorial boards. His major research focus is on information systems in business and government with a special interest in security, applications, formal representations of decision making and legal issues.*