Preface

Legacy information systems can be a serious headache for companies because, on the one hand, these systems cannot be thrown away since they store a lot of valuable business knowledge over time, and on the other hand, they cannot be maintained easily at an acceptable cost. For many years, reengineering has been a solution to this problem because it facilitates the reuse of the software artifacts and knowledge embedded in the system. However, reengineering often fails due to the fact that it carries out non-standardized and ad hoc processes. Currently, software modernization is proving to be an important solution to that problem, since software modernization advocates carrying out reengineering processes taking into account the principles and standards of model-driven development.

This book introduces business process archeology as an emerging stage within software modernization processes, focusing on understanding and recovering specific knowledge from existing software assets. Business process archeology consists of analyzing different software artifacts by means of reverse engineering techniques and tools in order to obtain very abstract models that depict not only the legacy systems, but also the company and/or the company operation supported by this system (e.g., business process models). This book presents methods, techniques, and new trends in business process archeology as well as some industrial success stories.

OBJECTIVE OF THIS BOOK

The overall objective of this book is to provide a means for researchers, designers, and practitioners to share experiences, new trends, and future challenges about business process archeology. This will also showcase the heterogeneous technology solutions implemented in different parts of the world in the realm of business process archeology. Specific objectives include the following:

- To provide business experts with a means to automate enterprise modeling;
- To provide software maintainers with a reference source to select different techniques to discover business knowledge from legacy information systems.

There is no other reference book devoted solely to discussing open issues, trends, and case studies about business process archeology.

This book is a means to collect different concrete techniques, methods, and industrial experiences about how to use, implement, and obtain benefits from business process archeology.
TARGET AUDIENCE

The target audience of this book is composed of professionals and researchers working in the field of information and knowledge management in various disciplines (e.g., government departments, information and communication sciences, e-Government practitioners and designers, university departments, computer science, and information technology). Moreover, the book provides insights and support to executives concerned with the management of expertise, knowledge, information, and organizational development in different types of business communities and environments.

ORGANIZATION OF THE BOOK

The chapters of this book provide a comprehensive overview on the current state-of-the-art of business process archeology and how to uncover essential legacy software artifacts. All chapters provide descriptions of innovative research and, if existing, practical or empirical evidence. As such, the book supports both research and practice. In detail, the book is organized as follows:

- Section 1 introduces by means of chapter 1 the fundaments and basis of Business Process Archeology;
- Section 2 addresses main concepts, fundaments, and techniques of software modernization, which are introduced together with their relationships with Business Process Archeology techniques;
- Section 3 presents techniques to detect, discover, and reconstitute services supported by a system and offered by a company. These Business Process Archeology techniques can identify and track relationships between the physical system, program functionality, data usage, and user interfaces;
- Section 4 summarizes Business Process Archeology techniques that focus on data architecture and data model of legacy information systems. Business Process Archeology also facilitates uncovering legacy database-related artifacts and assists with tracking and refactoring artifacts such as program-based data definitions, data access logic, and so on;
- Section 5 presents two chapters devoted to discuss Business Process Archeology patterns used to discover and transform legacy software artifacts;
- Section 6 introduces some Business Intelligence and Enterprise Modeling concerns related to Business Process Archeology such as event-driven enterprise architecture, organizational climate, knowledge management, and so forth;
- Section 7 discusses some miscellaneous issues like accessibility and verification of business process models.

CONCLUSION - WHAT WAS LEFT OUT

A book, even of the size of the one you currently hold in your hands is not large enough to cover all concerns and open issues of Business Process Archeology. We tried to collect the current state-of-the-art in the relatively new field of Business Process Archeology. Nevertheless, much had to be left out and could not be covered.
For more detail, readers may want to refer to additional material that is given by the references of single chapters. Furthermore, the editors ask all interested readers to ask for more information by contacting the authors and/or editors.

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