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Foreword

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Delivering such services to our clients requires a special dedication to developing the technical expertise required to successfully implement such applications as SAP R/3. In establishing SAP Centres of Expertise around the World, PricewaterhouseCoopers has sought to create a premier network of facilities where our professionals can develop and expand their knowledge in leading edge technologies. It was from the European SAP Centre of Expertise in Walldorf, Germany that this publication was created and it is from here, and other Centres around the World, that we continually develop the leading edge skills in new and emerging technologies required by our clients today.

PricewaterhouseCoopers is the world' s largest globally-focused SAP practice and the most successful. With such facilities as the European SAP Centre of Expertise and with the dedication of our professionals, such as Gerd Moser the author of this work, we will continue to deliver first class solutions to our clients, worldwide.

Andrew Gibbs
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European SAP Centre of Expertise
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Gerd Moser
Walldorf, Germany

Preface

Objectives and main points

The objective of this book is to serve as a tutorial on the technical as well as the business aspects of SAP interfacing technology, with particular emphasis on SAP's newly introduced Business Application Interfaces (BAPIs). The book will attempt to answer questions like:

- What is the concept of SAP's Business Framework Architecture and what is its future role?
- What are BAPIs?
- How can BAPIs be used to improve my application development?
- What are the key issues in programming with BAPIs?
- Which other interface technologies can be used beside the BAPIs?
- What is SAP's strategy for interfacing technologies? What are the technical challenges in connecting an external system with an R/3 system.
- What is the necessary SAP terminology and how do the terms and concepts interrelate?

The reader should be familiar with basic Information Technology (IT) terminology and its concepts.

Structure of the Book

The book is organised into the following chapters:

- **Chapter 1** – gives an overview about the market situation in the groupware and corporate application market. In particular, it looks at the two software companies Lotus and SAP, their flagship products Notes and R/3, and how a combination of them could close existing business gaps.
- **Chapter 2** – Groupware, Workflow and Workflow management are fast evolving technologies. To understand the concepts and how they relate to each other, this chapter defines

and compares them. A description of Lotus Notes, its architecture and its application development environment is covered in the second part of this chapter.

- **Chapter 3** – Corporate Applications, their historical development and their impact on IT, especially with the introduction of the SAP systems are also described. It gives an overview of R/3's functionality and Client/Server architecture and its development environment.
- **Chapter 4** – describes the R/3 system interfaces and how they relate to the ISO/OSI seven-layer model. It gives a short description of each of the interfaces used within a R/3-system.
- **Chapter 5** – This chapter focuses on the advantage of a connection between an R/3 and Lotus Notes system. It then analyses the combination of both systems and the resulting benefits for an enterprise.
- **Chapter 6** – This chapter describes Notes' object-oriented programming language LotusScript. It also describes the built-in extensions of LotusScript, LotusScript extensions (LSX) and their use in developing Notes applications.
- **Chapter 7** – gives an introduction to SAP's Business Framework Architecture (BFA) and its essential parts the Business Components, Business Objects and their interfaces, the BAPIs. Further on it shows how Business Objects are represented in the R/3 system and also how R/3's object-oriented technology can be understood.
- **Chapter 8** – This chapter describes BAPIs and their implementation within the R/3 system. It also takes a closer look at the underlying technology, which is the RFC technology.
- **Chapter 9** – This chapter discusses the technology which stands behind SAP's Application Link Enabling (ALE) and its interrelating technologies. The combination of BAPIs and ALE and their future deployment are discussed in more detail.
- **Chapter 10** – This chapter starts with the motivation for developing a prototype based on Lotus Notes 4.5 and SAP R/3 including a perspective of the aspired goals. It maps the prototype architecture, menu structure and describes each submenu, which will be implemented.

- **Chapter 11** – This chapter describes the technical realisation of the TES prototype. It includes and explains the coding of the various functions, which have been implemented in Lotus Notes and the R/3 System.
- **Chapter 12** – provides a summary of the experiences gained from working with these technologies, theoretically and practically and their future perspectives.

Intended Audience

This book is primarily aimed at information technology (IT) practitioners/managers and information systems students. It can be used in academic courses or in corporate training, or as a self-learning tool and particularly as a reference for SAP terminology.