ENTERPRISE RESOURCE PLANNING
Concepts and Practice
SECOND EDITION

Vinod Kumar Garg
Professor of Information Management
S.P. Jain Institute of Management and Research
Mumbai
and
N.K. Venkitakrishnan

PHI Learning Private Limited
New Delhi-110001
2011
ENTERPRISE RESOURCE PLANNING—Concepts and Practice, 2nd ed.
Vinod Kumar Garg and N.K. Venkitakrishnan

© 2003 by PHI Learning Private Limited, New Delhi. All rights reserved. No part of this book may be reproduced in any form, by mimeograph or any other means, without permission in writing from the publisher.

ISBN-978-81-203-2254-7

The export rights of this book are vested solely with the publisher.

Twenty-first Printing (Second Edition) … … September, 2011

Published by Asoke K. Ghosh, PHI Learning Private Limited, M-97, Cannaught Circus, New Delhi-110 001 and Printed by Jay Print Pack Private Limited, New Delhi-110015.
To the all pervading
Lord Krishna

निमित्तमात्रं भव सव्यसाचिन्
## Contents

Preface ix  
Preface to the First Edition xi  
Acknowledgements xiii  
Prologue 1  

1. **ERP—A CURTAIN RAISER** 3–19  
   - An Overview 3  
   - Accommodating Variety 4  
   - Integrated Management Information 4  
   - Seamless Integration 6  
   - Supply Chain Management 7  
   - Resource Management 8  
   - Integrated Data Model 10  
   - Scope 10  
   - Technology 11  
   - Benefits of ERP 11  
   - Evolution 14  
   - ERP Revisited 16  
   - ERP and the Modern Enterprise 17  
   - Problems 19  

2. **BUSINESS ENGINEERING AND ERP** 20–26  
   - An Overview 20  
   - What is Business Engineering (BE)? 20  
   - Significance of Business Engineering 21  
   - Principles of Business Engineering 21  
   - BPR, ERP and IT 22  
   - Business Engineering with Information Technology 23  
   - ERP and Management Concerns 25  
   - Problems 26  

3. **BUSINESS MODELLING FOR ERP** 27–36  
   - An Overview 27  
   - Building the Business Model 27  
   - Problems 36
vi  Contents

4.  ERP IMPLEMENTATION  37–54
   An Overview  37
   Role of Consultants, Vendors and Users  38
   Customization  39
   Precautions  39
   ERP: Post-implementation Options  42
   ERP Implementation Methodology  42
   Guidelines for ERP Implementation  49
   Problems  53

5.  ERP AND THE COMPETITIVE ADVANTAGE  55–65
   An Overview  55
   ERP and the Competitive Strategy  55
   Problems  65

6.  THE ERP DOMAIN  66–115
   An Overview  66
   MFG/PRO  67
   IFS/Avalon—Industrial and Financial Systems  71
   Baan IV  77
   SAP  82
   SAP R/3 Applications  84
   Example of an Indian ERP Package  110
   The Arrival of ERP III  111
   Problems  115

7.  MARKETING OF ERP  116–126
   An Overview  116
   Market Dynamics and Competitive Strategy  116
   Problems  126

8.  CASE STUDIES  127–140
   An Overview  127
   Mercedes-Benz  127
   Kee Hin Industries  129
   Bull Electronics Angers Plant Manufacturers  132
   Twentieth Century Companies, Inc.  134
   Ameritech  134
   Essar Steel  135
   Jindal Iron and Steel Company Ltd.  136
   Godrej Soaps and Associate Companies  137
   Indian Renewable Energy Development Agency (IREDA)  138
   ERP Handles Pressure  138
<table>
<thead>
<tr>
<th>Contents</th>
<th>vii</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sara ERP Case Study—Hawkins Cookers Ltd.</td>
<td>138</td>
</tr>
<tr>
<td>A Wholesome Enterprise Application</td>
<td>139</td>
</tr>
<tr>
<td>Sara IEMS (ERP III) Case Study—Pan Century Oleochemicals, Malaysia</td>
<td>139</td>
</tr>
<tr>
<td><strong>Appendix</strong></td>
<td><strong>141–142</strong></td>
</tr>
<tr>
<td><strong>Further Reading</strong></td>
<td><strong>143</strong></td>
</tr>
<tr>
<td><strong>Answers to Selected Problems</strong></td>
<td><strong>145–168</strong></td>
</tr>
<tr>
<td><strong>Index</strong></td>
<td><strong>169–185</strong></td>
</tr>
</tbody>
</table>
Preface

In this edition, we have tried to highlight the Indian ERP Packages, by inserting a section on “Example of an Indian ERP Package” that includes the integrated features of the ERP and explains the ERP III Architecture in brief. Also, two case studies have been inserted in Chapter 8, which demonstrate the successful implementation of the ERP package in India.

It has been an ongoing demand from the academic community that this book should have exercise problems at the end of chapters to make it a complete textbook. To this effect, we had added about 25 problems that cover most of the topics in the book. To help the academic community further, in the Second Edition we have provided hints and clues to most of these questions. However, these are only to be taken as guidelines.

We fervently hope that these additions and changes will make the text more useful and reader friendly.

Vinod Kumar Garg
N.K. Venkitakrishnan
Preface to the First Edition

Today, national economies are undergoing rapid and substantial transformation. Two forces underlie such changes. One is globalization—the explosive growth of global trade and international competition. No country can isolate itself from the world economy. If it closes its markets to foreign competition, its citizens may pay much more for lower quality goods. The other force is technological change. This decade has witnessed remarkable advances in the availability of information and speed of communication. Everyday, newer products are being offered, particularly in the electronic goods sector.

In addition to globalization and technological change, we are witnessing a power shift from manufacturers to giant retailers and growing consumer price and value sensitivity. These changes are throwing companies into a state of confusion regarding strategy. They have to protect their profits and remain competitive in a crowded market which is characterized by unprecedented competitive pressures and sophisticated customers. All these demand speedy solutions. Companies have to primarily respond by being cost competitive and, more essentially, reengineer their business processes.

With the emergence of powerful personal computers and the success of the Internet, consumers need no longer wait for business to lock them into any proprietary technology. The advent of the client/server concept has made remarkable differences in the approach of a customer in deciding a solution of his or her need and choice. Finally, the core aspect of process orientation in business and implementation of these aspects to achieve competitive advantage can be realized only by accepting the concept of Enterprise Resource Planning (ERP).

This book is intended for the wide spectrum of readers who wish to understand the concepts underlying ERP. For the managers it provides an in-depth, clear understanding of business processes and how ERP helps in reengineering these processes. The book also provides a comprehensive reference for ERP and has broad application for business, consultants and academia.

For business leaders—either those already involved in business or about to be involved in new business design and ERP implementation, this book will help address the various issues of implementing an ERP solution while at the same time allay their fears of switching over from the current system to a more business oriented solution.
This book is intended to equip business decision makers, consultants, and students to manage more effectively areas that are strategic to successfully run information technology oriented companies. It is expected to provide a deep understanding of the need for implementing an ERP solution of the real issues of business that provide value to customers and enable the managerial personnel to maintain a competitive edge and tackle real-life solutions more effectively and on time.

Vinod Kumar Garg
N.K. Venkitakrishnan
Acknowledgements

Any book of this kind relies primarily on the studies of authentic business situations and on articles published in various computer journals and magazines. We had to depend on such information and the feedback sent by various organizations that have implemented ERP. We wish to acknowledge all such assistance. Our deep appreciation is also due to numerous business managers and executives who have so generously given their time and advice which was based on their experience of encountering various day-to-day business problems and how an ERP implementation solution has provided a respite.

We also wish to express our sincere appreciation to Dr. A.K. Chitale of GS Institute of Technology & Science, Indore and Dr. V.N. Garg of IITM, Indore, who helped us in taking the initial decision to prepare this book for publication. Similarly, we acknowledge with gratitude the support and encouragement of our colleagues at CyberTech Systems and Software Limited.

We profusely thank Narendra Nadkar, Lata Chablani and Reshmi Nair of CyberTech Systems and Software Limited for their assistance in the preparation of the manuscript.

We would like to specially mention Sarita Garg, Neeti Garg, Vikram Garg, Uma Venkitakrishnan and Vasudha Venkitakrishnan for all the encouragement, patience and special care shown by them so that we could successfully complete the manuscript on time.

We are also grateful to our parents Dr. R.P. Garg, Kailashi Garg, N.V. Kailasam, Lakshmi Kailasam and all our family members for their constant blessing and guidance, without which this publication would not have been possible.

Finally, we would like to express our sincere thanks to the publishers, PHI Learning whose encouragement and assistance have helped in the speedy and quality publication of the book.

Vinod Kumar Garg
N.K. Venkitakrishnan
Prologue

Market Overview

Today, many organizations face continuous demands from rapidly changing and increasingly competitive global markets. They also must serve customers who want innovative, high-quality products that feature special options. Additionally, further pressures are created by technology developments that shorten many product life cycles, and by intensified international competition which drives corporations to reduce costs and improve production efficiencies.

To increase their competitive advantage, companies must have flexible business information systems that adapt to rapid changes. To address these needs, enterprise business applications must provide solutions that concentrate on the customer by integrating the supply chain.

Enterprise Resource Planning (ERP) is one of the fastest growing segments of Information Technology today. Though numerous articles and reports keep appearing in computer magazines and newspapers, the information is not available in consolidated form. This book ERP—Concepts and Practice is an attempt to fill this lacuna and is, therefore, expected to be of assistance to students and practitioners alike.
Enterprise Resource Planning: Concepts And Practice

Publisher: PHI Learning
ISBN: 9788120322547
Author: VK Garg And N K Venkatkrishnan

Type the URL: http://www.kopykitab.com/product/10257

Get this eBook