

CONTENTS

Preface	6
Chapter I. Introduction to Information Technology (IT)	8
1.1. What is Information Technology?	11
1.2. What are Data, Information and Knowledge?	14
1.3. Data, Information and Knowledge in Organizations	21
1.4. What is Digitization and Datatization?	29
1.5. Basic Theories and Standards of Information Technology	32
1.6. Information Technology and Communication	37
1.7. What Kind of Values that IT Produces	41
1.8. The Effects of IT on Organizational Structure	44
1.9. The Effects of IT on Organizational Management	49
1.10. The Effects of IT on Decision Making	55
1.11. The Effects of IT on Organizational Productivity	58
Chapter II. Information Systems Infrastructure	62
2.1. Hardware	63
2.2. Software	71
2.3. Databases (DB)	79
2.4. Networking	87
2.5. Internet Technology	93
2.6. Wireless and Mobile Technologies	103
2.7. Cloud Computing (CC)	112
2.8. How to Make the Choice of Information Technologies?	118
2.9. Total Cost of Ownership of Information Systems	125
Chapter III. Introduction to Information Systems (IS)	129
3.1. What is a System?	133
3.2. What is a System Approach?	136
3.3. What is Information System?	139
3.4. Data Processing Systems (DPS)	148
3.5. Office Automation Systems (OOS)	152
3.6. Process Control Systems (PCS)	156
3.7. Business Process Management Systems (BPR)	162
3.8. Management Information Systems (MIS)	166
3.9. Management Information Systems Expert	173
3:10. Decision Support Systems (DSS)	181
3.11. Group Decision Support Systems (GDS)	186
3:12. Senior Management Support Systems (SMSS)	189
3:13. Intranet and Extranet Systems	195
3:14. Information and Knowledge Management (KM)	198

3.15. Information and Knowledge Management Models	205
3:16. Information System Employees and Administrators	212
Chapter IV. MIS Subsystems	218
4.1. Sales and Marketing Information System (MIS)	220
4.2. Production Informatics System (PIS)	223
4.3. Human Resources Information System (HRIS)	228
4.4. Financial Information System (FIS)	234
4.5. Accounting Information System (AIS)	236
4.6. Supply and Logistics Information System (LIS)	242
4.7. Engineering and R & D Information System	245
4.8. After Sales Services (ASS) Information System	247
Chapter V. Enterprise Systems	250
5.1. Enterprise Resource Planning (ERP) System	253
5.2. Supply Chain Management (SCM) System	262
5.3. Customer Relationship Management (CRM) System	272
5.4. Corporate Web Site	281
5.5. Electronic Commerce (e-Commerce)	292
5.6. Mobile Commerce (m-Commerce)	307
5.7. Collaboration Technologies and Social Networks	309
5.8. Electronic Meeting Systems (EMS)	314
Chapter VI. Business Intelligence Systems Management	318
6.1. What is Business Intelligence Systems?	320
6.2. OLAP Systems	327
6.3. Data Warehouses (DW) and Data Mart (DM)	333
6.4. Data Mining (DM)	341
6.5. Text and Web Mining (WM)	350
6.6. ETL Software	352
6.7. Information Reporting Systems	354
Chapter VII. Artificial Intelligence (AI) Management	357
7.1. What is Artificial Intelligence?	358
7.2. Expert Systems (ES)	364
7.3. Robotic Systems	371
7.4. Genetic Algorithms (GA)	374
7.5. Artificial Neural Networks (ANN)	377
7.6. Fuzzy Logic (FL)	380
Chapter VIII. Information Systems Design	383
8.1. Information Systems Design Methods	387
8.2. Information Systems Design	393
8.3. Information System Software Quality and Evaluation	404
8.4. Information Systems Modeling Language	409
Chapter IX. Information Systems Management	411

9.1. What is Information Systems Management?	412
9.2. Global Information Systems Management	415
9.3. Information Systems Project Management	418
9.4. Information Systems Risk Management	428
9.5. Information Systems Strategy Management	430
9.6. Information Systems Security Management	432
Chapter X. Digital Organization Management	447
10.1. What is Digital Organization Management?	448
10.2. Management Levels at Organizations	453
10.3. Internal and External Factors Affecting Organizations	457
10.4. SWOT Analysis in Organizations	460
10.5. Business Vision, Mission and Values	463
10.6. Business Strategic Plan (BSP)	470
10.7. Management Factors in Digital Organizations	474
10.8. Administrator Functions in Digital Organizations	479
10.9. Competition Management in Digital Organizations	483
10:10. Change Management in Digital Organizations	497
Chapter XI. Information Technology Ecosystem	502
11.1. Information Class and Its Properties	503
11.2. Information Technologies and Employment	505
11.3. Information Technologies and Unemployment	511
11.4. Information Technologies and Learning Organizations	514
11.5. Information Technologies and Innovation	520
11.6. Informatics Law, Ethics and Intellectual Property	527
11.7. Computer Ergonomics, Working Environment and Health	534
11.8. Computer Viruses and Losses	541
Chapter XII. Information Systems Philosophy and Suggestions	547
Epilogue	555
Abbreviations	556
Internet References	564
References	565
Curriculum Vitae	589
Other Books by Author	590