Contents

Part I Cultural Content and the Information Society

- 1 Digital Content 3
- 2 e-Society and the Social Divide 5
- 3 Quality Content 9
- 4 Digital Content and Creativity 13
- 5 Cultural Content 15
 - 5.1 Tangible and Intangible Digital Heritage 19
 - 5.2 UNESCO's "Intangible Heritage" 19
- 6 Digital Communication: the Role of Context 21
- 7 Cultural Diversity and Cultural Models 23
 - 7.1 On Culture in a Worldwide Information Society 26
- 8 Content, Communication and Tools 33
 - 8.1 Why is Digital Communication Revolutionary? 33
 - 8.2 Memetics and the Internet 36
 - 8.3 The Evolution of the Digital Species 39
 - 8.4 Historical Background 42
 - 8.5 Nonlinear Versus Linear, and Many Media Versus Just One Medium 49
 - 8.6 Technology: From the Stylus to the Computer 51
 - 8.7 From Standalone Computers to the Internet and Wireless Communication 57
 - 8.8 Digital Convergence and the History of Movies 64
 - 8.9 Information Transmission 66
 - 8.10 Some Concluding Remarks 68 References 71

Contents XXV



Part II The General Technological Framework

- 9 Native Digital Content 81
 - 9.1 Data Creation 81
 - 9.2 Native "Nondigital" Content 82
 - 9.3 Data Acquisition and Digitisation 83
- 10 Datasets and Formats 101
 - 10.1 Data Types 101
 - 10.2 Image Compression 108
 - 10.3 Archiving Tools and Standards 109
 - 10.4 Colours and Palettes 109
 - 10.5 The Most Popular Graphics File Formats 110
- 11 Data Visualisation and Display Technologies 113
 - 11.1 From Two-Dimensional to Three (and Higher)-Dimensional Views 114
 - 11.2 Computer Graphics and Virtual Reality 118
 - 11.3 Evolution of Virtual Reality 119
 - 11.4 Enhanced Reality 131
 - 11.5 Telepresence and Robots 133
- 12 Interaction Design 139
 - 12.1 Interaction Design and Affective Aspects 142
 - 12.2 Tyrannical or User-Friendly Technology? 142
 - 12.3 Expected Product Life and Life Cycles 144
 - 12.4 Sustainable Development of Menus and Options 147
 - 12.5 Accessibility 149
 - 12.6 Usability 153
- 13 Computer Games, Edutainment and Theme Parks 155
 - 13.1 Information Technology and the Young 155
 - 13.2 Computer Games and Digital Cultures 156
 - 13.3 Games 158
 - 13.4 Interactivity and Immersivity 160
 - 13.5 Abstract Games 160
 - 13.6 Simulations 161
 - 13.7 Simulators, Dark Rides and Other Nonlinear Formats 163
 - 13.8 A Brief History of Computer Games 169

- 13.9The History of Computer Games ViewedFrom an Application Perspective173
- 13.10 Other Kinds of Entertainment 176
- 13.11 Creative Activities 177
- 13.12 Smart Phones 178
- 13.13 Theme Parks and High-Tech Shows 179
- 14 Customer Relationship Management 181
- 15 Smart Labels, Smart Tags and RFID 183
- 16 Standards and Protocols for Interoperability 185
 - 16.1 More on Interoperability 186
- 17 Data Tags and the Semantic Web 187
 - 17.1 Markup Languages and Data Tagging 187
 - 17.2 Content, Structure, Format and Reference 189
 - 17.3 Data and Metadata 190
 - 17.4 Semantic Web 191
 - 17.5 Advanced Online Services 193
 - 17.6 Advanced W3C Design and Evaluation 199
- 18 Ambient Intelligence 201
- 19 Long-Term Preservation of Digital Archives 203
 - 19.1 Graffiti From the Digital Era 203
 - 19.2 Already Lost... and To Be Lost 205
 - 19.3 Historical Background of Initiatives 207
 - 19.4 Digital Fragility: Problems and Issues 208
 - 19.5 The Rationale Behind Preservation 210
 - 19.6 Economy and Infrastructure 213
 - 19.7 Some Closing Remarks 214
- 20 The Future: the Weave of the Digital Fabric 219
 - 20.1 Predicting the Future 219
 - 20.2 Institutes for the Future 220 References 223

Part III

Exploitation, Applications and Services

- 21 Content, Communication and Tools 237
 - 21.1 Culture, ICT and Emerging Technologies 238
 - 21.2 Which Role? 238

- 21.3 Cultural Content 238
- 21.4 Standards and Good Practices 239
- 21.5 Sustainability and Economic Models 239
- 21.6 Data Acquisition and Digital Preservation 240
- 21.7 Comparing Classification Schemes 240
- 21.8 Data Structure and Interoperability 240
- 21.9 Maintenance of Large Databanks 240
- 21.10 Navigation Tools, Interfaces and Metaphors 241
- 21.11 Experiencing Cultural Heritage 241
- 21.12 Information Policies: Frameworks and Intellectual Property Rights 242
- 21.13 Monument Conservation 243
- 21.14 Education and Training 243
- 22 Exploitation, Applications and Services 245
 - 22.1 Accessing European Cultural Heritage 247
- 23 Prioritisation in Digitalisation 249
- 24 Cataloguing Standards and Archiving Tools 251
 - 24.1 Historical Background of Cataloguing 252
 - 24.2 Data Standards 255
 - 24.4 Some Basic Problems That Must be Solved When Cataloguing Historical Items 266
 - 24.5 Catalogues and Database Management Systems 267
- 25 Virtual Museum Networks 269
 - 25.1 MCN and the CIMI Initiative 271
 - 25.2 Recent Applications 272
- 26 Unique Object ID 277
 - 26.1 One of the Proposed Solutions 279
- 27 Different Channels and Platforms 283
- 28 Intellectual Property Rights 287
 - 28.1 Introduction 287
 - 28.2 Copyleft 287
 - 28.3 Free Access 289
 - 28.4 Freeware 289
 - 28.5 Copyright 290
 - 28.6 Digital Uncertainties 294
 - 28.7 Image Scanning and Image Security 294
 - 28.8 The Malaysian Experiment 296

XXVIII Contents

- 28.9 Creative Commons 300
- 28.10 The Products 304
- 28.11 Creativity, Production and Market 305
- 28.12 Final Considerations 305
- 28.13 Digital Rights Management and Clearance 306
- 28.14 Protecting Rights 307
- 28.15 Digital Object Identifiers 310
- 29 Technology and Privacy 313
 - 29.1 Privacy and Personal Data Management 314
- 30 Usability, Accessibility and Platforms 317
- 31 Content Repackaging 321
 - 31.1 The Evolution of Hypertext Markup 324
- 32 Experiencing Cultural Content 325
 - 32.1 Impact of the Interface on the Enjoyment of Cultural Content 332
 - 32.2 A Quick Overview 334
 - 32.3 Advanced Interaction Models for Cultural Content 341
- 33 Cultural Tourism 359
 - 33.1 Application Trends 363
- 34 Games and Edutainment Applications 375
- 35 Hands-On and Interactive Museums 379
 - 35.1 Science and Technology Museums 380
 - 35.2 Theme Parks 383
 - 35.3 From Conventional to Hi-Tech Exhibits 393
- 36 Educational Market 395
 - 36.1 The Role of Memory Institutions 398
- 37 Culture Counts: the Economic Dimension 401
 - 37.1 Some of the Basic Conditions Required to Develop the Cultural Heritage Market 404
 - 37.2 Cultural Heritage as Value Generator in a Post-Industrial Economy 405
 - 37.3 Economic Promotion of Cultural Heritage: Problems and Issues 411
 - 37.4 Cultural Services and Markets 412
 - 37.5 Emerging Professional Profiles 413
 - 37.6 Cultural Services and Markets: the Challenge 415
 - 37.7 The European ICT Market 418

- 37.8 A European Knowledge Society 420
- 37.9 The Challenge: Fostering Creativity 421
- 37.10 The Art Market and Digital Media 423
- 38 Quality 427
 - 38.1 Affective Quality 430
- 39 Conclusions and Future Trends 435 References 437

Subject Index 453

