

- Acknowledgments p. xv
- 1 Introduction p. 1
- Part I Network markets and standardization p. 5
- 2 Characteristics of network markets and their impact on corporate strategies p. 7
- 2.1 Definition of network markets p. 7
- 2.2 Network externalities and positive feedback p. 8
- 2.3 Lock-in and switching costs p. 10
- 2.4 First and second movers p. 11
- 2.5 Corporate strategies in network markets p. 12
- 2.5.1 Consumer expectations p. 12
- 2.5.2 Vertical integration p. 13
- 2.5.3 Pricing and equipment commitments p. 14
- 2.5.4 Reputation and advertising p. 14
- 2.5.5 Penetration pricing p. 15
- 2.6 The impact of compatibility on competition p. 15
- 2.7 Regulation in network markets p. 17
- Endnotes p. 18
- 3 Approaches to standardization p. 21
- 3.1 Definition of compatibility standards p. 21
- 3.2 Advantages and disadvantages of standardization p. 22
- 3.2.1 Benefits of standardization p. 22
- 3.2.2 Potential disadvantages of standardization p. 23
- 3.2.3 Levels of standardization p. 23
- 3.3 Approaches to standardization p. 24
- 3.3.1 The market-driven approach p. 25
- 3.3.2 The direct regulatory (interventionist) approach p. 28
- 3.3.3 The committee approach p. 30
- 3.4 Concluding remarks p. 33
- Endnotes p. 34
- Part II The standardization of advanced television services in the European Union p. 37
- 4 Advanced television technology p. 39
- 4.1 Basic characteristics of a digital-TV system p. 39
- 4.2 Digital TV versus HDTV p. 42
- 4.3 Characteristics of different distribution media p. 44
- 4.3.1 Satellite transmission p. 45
- 4.3.2 Terrestrial transmission p. 45
- 4.3.3 Cable transmission p. 46
- 4.4 Additional technologies in the set-top box p. 47
- 4.4.1 Conditional access p. 47
- 4.4.2 Electronic program guides p. 48
- 4.4.3 The application programming interface p. 48
- Endnotes p. 49
- 5 European standardization approaches for HDTV and DVB p. 51
- 5.1 The European Commission's policy on standardization p. 51

- 5.2 HDTV p. 54
- 5.3 DVB p. 57
- 5.3.1 The European Launching Group p. 57
- 5.3.2 The DVB Group p. 58
- 5.3.3 The conditional access debate p. 61
- 5.3.4 EU regulation of digital-TV services p. 68
- 5.3.5 Further developments toward a common European API p. 70
- 5.4 Assessment of the DVB standardization approach p. 72
- Endnotes p. 76
- Part III Diffusion of DVB technology p. 79
- 6 Digital TV in France: A European success story p. 81
- 6.1 Introduction p. 81
- 6.2 The television landscape prior to the launch of digital offerings p. 82
- 6.2.1 Terrestrial television p. 82
- 6.2.2 Satellite TV p. 83
- 6.2.3 The cable-TV market p. 84
- 6.3 The digital satellite broadcasters p. 88
- 6.3.1 Canal Plus: The first mover in the market p. 88
- 6.3.2 TPS: Challenge to the dominant player p. 95
- 6.3.3 ABSat: From platform operator to program supplier p. 99
- 6.4 Digital-cable offerings p. 101
- 6.4.1 NC Numericable p. 101
- 6.4.2 Noos p. 102
- 6.4.3 France Telecom Cable p. 103
- 6.4.4 Aggregate analysis of digital cable TV p. 104
- 6.5 DTT: Still to come to France p. 106
- 6.6 The regulation of broadcasting in France p. 107
- 6.6.1 The regulatory authorities p. 107
- 6.6.2 Media policy p. 108
- 6.6.3 Current media regulation p. 109
- 6.6.4 The impact of digital technology on regulation p. 110
- 6.6.5 Regulation of conditional access p. 111
- 6.7 Summary p. 112
- 6.7.1 Why digital TV proved successful in France p. 112
- 6.7.2 A look to the future p. 114
- Endnotes p. 115
- 7 Germany: A large market with little demand for digital pay TV p. 117
- 7.1 Introduction p. 117
- 7.2 Market structures in analog TV p. 118
- 7.2.1 General remarks p. 118
- 7.2.2 A shrinking terrestrial sector p. 120
- 7.2.3 A strong cable sector p. 120
- 7.2.4 A growing satellite sector p. 121
- 7.3 The struggle of Kirch and Bertelsmann to dominate digital pay TV p. 122

- 7.3.1 Kirch's Digitales Fernsehen 1 (DF1): Pioneer in the marketplace p. 122
- 7.3.2 The rise and fall of the Multimedia Betriebsgesellschaft (MMBG) p. 125
- 7.3.3 The pay-TV service Premiere: Competitors united p. 128
- 7.3.4 Premiere, DF1, and Deutsche Telekom: An anticompetitive alliance p. 128
- 7.3.5 Kirch Group: Change of strategy p. 130
- 7.4 Public broadcasters ARD and ZDF provide digital free TV p. 135
- 7.4.1 ARD Digital p. 136
- 7.4.2 ZDF.vision p. 137
- 7.5 Deutsche Telekom: Becoming an independent service provider p. 138
- 7.5.1 Deutsche Telekom's cable network restructuring p. 138
- 7.5.2 Deutsche Telekom's program offering MediaVision p. 139
- 7.6 Plans for further digital program offerings p. 140
- 7.6.1 RTL Television p. 141
- 7.6.2 MTV Networks p. 141
- 7.6.3 Onyx Television p. 141
- 7.6.4 @TV p. 141
- 7.6.5 United Pan-Europe Communications p. 142
- 7.6.6 PrimaCom p. 142
- 7.7 DTT: Trials for a small market p. 142
- 7.8 Media regulation in Germany p. 143
- 7.8.1 A complex system with state regulation of media p. 143
- 7.8.2 Control of media concentration p. 144
- 7.8.3 The implications of convergence for regulation p. 145
- 7.8.4 Rundfunkstaatsvertrag 2000: A proactive role for the government p. 146
- 7.9 Summary p. 147
- 7.9.1 Why digital pay TV proved unsuccessful in Germany p. 148
- 7.9.2 Kirch's strategic mistakes p. 149
- 7.9.3 A look to the future p. 149
- Endnotes p. 150
- 8 The United Kingdom: Late introduction and fast penetration of digital TV p. 151
- 8.1 Introduction p. 151
- 8.2 The structure of the U.K. television market prior to digital launch p. 152
- 8.2.1 A small terrestrial offering for the large part of the market p. 152
- 8.2.2 A struggling cable industry p. 153
- 8.2.3 A monopolized satellite sector p. 156
- 8.3 The United Kingdom pioneers DTT p. 157
- 8.3.1 Existing broadcasters p. 158
- 8.3.2 The bidders for the commercial multiplexes p. 161
- 8.4 Business strategies of the digital pay-TV competitors p. 165
- 8.4.1 BSkyB: Defending its dominant position p. 165
- 8.4.2 ONdigital: A successful second mover p. 171
- 8.5 A new chance for the cable industry? p. 176
- 8.5.1 The advantages of digital cable p. 176
- 8.5.2 Digital cable services p. 177

- 8.6 A focus on regulation p. 181
- 8.6.1 The regulatory system p. 181
- 8.6.2 Media ownership regulation p. 185
- 8.6.3 A look at past regulatory approaches for cable and satellite TV p. 185
- 8.6.4 The regulation of digital TV p. 189
- 8.7 Summary p. 195
- 8.7.1 Competition has created rapid penetration p. 195
- 8.7.2 Regulation created certainty for digital-TV players p. 197
- Endnotes p. 198
- 9 Comparative analysis of market developments in France, Germany, and the United Kingdom p. 201
- 9.1 Introduction p. 201
- 9.2 The impact of standardization on digital-TV penetration p. 202
- 9.3 Preconditions for the launch of digital TV p. 204
- 9.3.1 Penetration levels of multichannel and pay TV in France and the United Kingdom p. 204
- 9.3.2 Reputation and brand of existing broadcasters in France and the United Kingdom p. 205
- 9.3.3 Preconditions are very different in Germany p. 206
- 9.4 Strategies and consumer propositions for digital services p. 207
- 9.4.1 The first movers p. 208
- 9.4.2 The second movers p. 212
- 9.5 The effects of public debates and regulation p. 219
- 9.5.1 Media publicity with negative effects in Germany p. 220
- 9.5.2 United Kingdom: Public debate and regulation create consumer confidence p. 221
- 9.5.3 France: No need for public debates p. 222
- 9.6 Summary p. 223
- Part IV Digital TV in the United States and Japan p. 225
- 10 Developments for digital TV in the United States p. 227
- 10.1 Introduction p. 227
- 10.2 The standardization process p. 228
- 10.2.1 Focus on HDTV p. 228
- 10.2.2 A range of proposed DTT standards p. 229
- 10.2.3 The Grand Alliance and the ATSC p. 230
- 10.2.4 Involvement of the computer industry p. 230
- 10.2.5 Assessment of the standardization process in the United States p. 231
- 10.3 Overview of the U.S. television market p. 232
- 10.4 Digital satellite TV p. 233
- 10.4.1 Digital spurs the emergence of satellite TV p. 233
- 10.4.2 DirecTV: The market leader p. 235
- 10.4.3 United States Satellite Broadcasting Company: A niche operator swallowed up p. 235
- 10.4.4 PrimeStar: Another competitor swallowed up p. 236
- 10.4.5 Alphastar: An unsuccessful niche operator p. 236
- 10.4.6 Echostar: A latecomer catching up p. 237
- 10.5 Digital cable TV p. 237

- 10.6 DTT: Driven by the regulator p. 238
- 10.6.1 Government incentives p. 239
- 10.6.2 DTT take-up is slow p. 239
- 10.6.3 Debate around the suitability of the 8VSB standard p. 240
- 10.7 Summary p. 241
- 10.7.1 Standardization focuses on costly HDTV-set sales p. 241
- 10.7.2 Comparison of European and U.S. standardization processes p. 243
- 10.7.3 International acceptance of DVB and ATSC standards p. 244
- Endnotes p. 244
- 11 Digital TV in Japan: From pioneer to laggard? p. 245
- 11.1 Introduction p. 245
- 11.2 The legacy of HiVision p. 246
- 11.3 The government plan for DTT p. 247
- 11.3.1 Development of the ISDB-T standard p. 247
- 11.3.2 Government plans for DTT penetration p. 248
- 11.4 Satellite TV: Nothing new to the Japanese viewer p. 249
- 11.4.1 Broadcast and communications satellite TV p. 249
- 11.5 Cable TV: Weak but getting stronger p. 253
- 11.5.1 Slow development of analog cable services p. 254
- 11.5.2 Digital cable services p. 255
- 11.6 Summary p. 255
- 11.6.1 A failed first mover strategy p. 256
- 11.6.2 Benefits only for the consumer-electronics industry p. 257
- 11.6.3 A dilemma for the Japanese government p. 257
- 12 Final assessment and conclusion p. 259
- 12.1 European standardization has proven a success p. 259
- 12.2 Commercial orientation sets the scene for rapid penetration p. 260
- 12.3 Existing market structures impact technology diffusion p. 261
- 12.4 Reviving consumer-electronics markets p. 262
- 12.5 Nonstandardization of conditional access has not led to market distortion p. 262
- 12.6 Minimal intervention by authorities is the preferable approach p. 263
- Glossary p. 265
- About the Author p. 271
- Index p. 273