PART I
THE NEW COMPETITIVE TELECOMMUNICATIONS ENVIRONMENT

Chapter 2
Competition and Regulation—a Continuing Telecommunications Cycle 11

2.1 Competition versus Regulation—Seeking a Balance 12
  2.1.1 Rise of Trusts and Anticompetitive Behavior 12
  2.1.2 Antitrust Law and Regulation 13
  2.1.3 Impact of Technological Changes 16

2.2 Early Competition in the Communications Industry 17
  2.2.1 Telegraph 17
  2.2.2 International Telegraph Communications 18
  2.2.3 Equipment Manufacturing 18
  2.2.4 Telephone 19

2.3 The Rise of the Bell System Dominance 21
  2.3.1 Bell's Patent Exclusivity and Return on Investment 21
  2.3.2 AT&T Parent over Bell System and Western Union 22
  2.3.3 AT&T's Refusal to Interconnect with Competitors 22
Contents

2.4 Regulation of the Communications Industry 23
  2.4.1 1912 Antitrust Case: Settled with 1913 Kingsbury Commitment 23
  2.4.2 Universal Service 24
  2.4.3 1921 The Willis-Graham Act 26
  2.4.4 1934 Communications Act 27
  2.4.5 1949 Antitrust Case: Settled with 1956 Consent Decree 27
  2.4.6 1974 Antitrust Case: Settled with 1982 Modified Final Judgment 28

2.5 Technological Convergence and Renewed Competition 29
  2.5.1 Customer Premises Equipment 30
  2.5.2 Microwave 31
  2.5.3 Undersea Cables 33
  2.5.4 Satellites 35
  2.5.5 Computers 39

Conclusion 47
Endnotes 48

Chapter 3
The Telecommunications Act of 1996 55

3.1 Purpose of the Telecommunications Act of 1996 56
  3.1.1 Federal Action 56
  3.1.2 States' Action 59

3.2 Structure and Organization of the 1996 Act—47 U.S.C. §§ 151 et seq. 59

3.3. Definitions—Section 3 of the Telecommunications Act of 1996 61
  3.3.1 Three-Pronged Definition of Telecommunications 61
  3.3.2 Definitions of Carriers 63
  3.3.3 Definitions of Equipment 67

3.4 Provisions to Open the Competitive Market 68
  3.4.1 Three Ways to Enter the New Competitive Market, §251(c)(2-4) 68
  3.4.2 Implementation of the 1996 Act, §251(d)(1) 70
  3.4.3 Process for Writing Interconnection Agreements, §252 72
  3.4.4 Post-Approval Issues 74

3.5 Duties and Obligations of Carriers 75
  3.5.1 All Telecommunications Carriers, §251(a) 76
  3.5.2 Duties of Local Exchange Carriers, §251(b) 79
  3.5.3 Duties of Incumbent Local Exchange Carriers, §251(c) 84
  3.5.4 Duties of Bell Operating Companies, §271 87

3.6 Challenges to the Constitutionality of Section 271 Requirements 92
  3.6.1 Bill of Attainder 93
  3.6.2 Separation of Powers 94
  3.6.3 Equal Protection Clause 94
  3.6.4 Bell Operating Companies' Right to Free Speech 95

Conclusion 95
Endnotes 96

Chapter 4
Outstanding Issues from the Telecommunications Act of 1996 99

4.1 Local Number Portability 99
  4.1.1 Three Types of Number Portability 101
  4.1.2 The North American Numbering Plan 102
  4.1.3 Pre-1996 Number Portability in the United States 103
  4.1.4 Interim Methods 103
  4.1.5 Long-Term Database—Dip Methods 105
  4.1.6 Number Portability Regulation 106
  4.1.7 Ongoing Issues 106

4.2 Universal Service 108
  4.2.1 The Early Concept 108
  4.2.2 Universal Service in the 1996 Act 108

4.3 Access 112
  4.3.1 FCC's 1983 Access Charge Rules 113
  4.3.2 Initial Challenge to FCC's Exemption of ISPs—ACTA's Internet Phone Petition to Designate ISPs as Long-Distance Providers 115
  4.3.3 Impact of the Telecommunications Act of 1996 116

4.4 Reciprocal Compensation—Payment for Transport and Termination of Communications 117
4.4.1 Initial Reaction of Incumbent Local Exchange Carriers and Competitive Local Exchange Carriers to Reciprocal Compensation 119
4.4.2 Incumbent Local Exchange Carriers’ Reaction to Competitive Local Exchange Carriers’ ISP-Minutes-Terminated Strategy 121
4.4.3 State Regulatory Concerns Regarding Competitive Local Exchange Carriers’ ISP Strategy 130
4.4.4 Challenges to FCC’s Authority and Rules Implementing the Telecommunications Act of 1996 134
4.4.5 February 1999—FCC’s Declaratory Ruling 136

Conclusion 144
Endnotes 145

PART II
EMBRACING THE EXPANDED GLOBAL TELECOMMUNICATIONS MARKET

Chapter 5
The World Trade Organization and Its Telecommunications-Related Agreements 151

5.1 Historical International Trade—Goods, Not Services 152
5.1.1 International Trade Law 153
5.1.2 U.S. Trade Policy 153
5.2 1948—the General Agreement on Tariffs and Trade 155
5.2.1 Structure and Operation of GATT 155
5.2.2 1970s and 1980s—Movement to Include Trade in Services in GATT 157
5.2.3 September 20, 1986—Opening of the GATT’s Uruguay Round 158
5.2.4 GATT Principles 159
5.2.5 Drafts of the Services Framework 162
5.3 December 1992—North American Free Trade Agreement NAFTA 165
5.3.1 Telecommunications Equipment and Service 165
5.3.2 Licensing 166
5.3.3 Technical Standards 166
5.3.4 Basic versus Enhanced Telecommunications Services 166
5.3.5 Antitrust Issue 167
5.3.6 Intellectual Property Issues 167
5.3.7 Dispute Resolution 167

5.4 March 1994—The Global Information Infrastructure (GII) Concept is Introduced 168
5.5 April 15, 1994—Uruguay Round Concluded, WTO Created in Marrakesh, Morocco 168
5.5.1 Volume I—The Legal Texts 169
5.5.2 WTO Established and Absorbed GATT 171
5.5.3 Annex 1A—1994 GATT 175
5.5.4 Annex 1B—1994 GATS 175
5.5.5 Annex on Article II (Most-Favored Nations) Exceptions 184
5.5.6 April 1995—Annex on Telecommunications 184
5.5.7 Annex on Negotiations on Basic Telecommunications (NBT) 185

5.6 April 24, 1996—Initial Results of the Negotiations on Basic Telecommunications 188
5.6.1 Negotiating Group on Basic Communications’ Reference Paper to the Council for Trade in Services 188
5.6.2 Market Access Offers—Country Commitments to Include Basic Telecommunications 189
5.6.3 Agreement to Set Second Deadline for Continued Negotiations on Basic Telecommunications 190

5.7 December 1996—Singapore Ministerial Conference 190
5.8 February 15, 1997—WTO Agreement on Basic Telecommunications 191
5.9 April 15, 1997—Fourth Protocol to GATS Adopted 191
5.9.1 November 1997 192

Conclusion 192
Endnotes 193
Chapter 6
Participating in Global Telecommunications Trade: U.S. Import and Export Laws 197

6.1 U.S. Trade Laws 199
6.1.1 Chapter 4—Tariff Act of 1930 200
6.1.2 Chapter 12—Trade Act of 1974 201
6.1.3 Chapter 13—Trade Agreements Act of 1979 201
6.1.4 Chapter 17—Negotiation and Implementation of Trade Agreements (The Omnibus Trade and Competitiveness Act of 1988) 202
6.1.5 Chapter 19—Telecommunications Trade Act of 1988 203
6.1.6 Chapter 21—North American Free Trade Agreement Implementation Act of 1993 203
6.1.7 Chapter 22—Uruguay Round Trade Agreements 203

6.2 U.S. Export Laws 204
6.2.1 Export Administration Act of 1979 (EAA) 204
6.2.2 Arms Export Control Act (AECA) 204

6.3 Implementing Agencies 205
6.3.1 U.S. Trade Representative 206
6.3.2 International Trade Commission (ITC) 206
6.3.3 Coordinating Committee for Multilateral Export Control (COCOM) 206
6.3.4 The Defense Technology Security Administration and the Office of Defense Trade Control 207
6.3.5 Department of Commerce 207

6.4 What Is Exported? 209
6.4.1 Department of Commerce's Commodity Control List (CCL) 209
6.4.2 COCOM's International Industrial and Munitions Lists 210
6.4.3 Department of Defense's Munitions List 210
6.4.4 Classification of Re-exports 210
6.4.5 Licensing Requirements 211

6.5 To Whom Is the Product Exported? 213
6.5.1 Trading with the Enemy Act (TWEA) and the International Emergency Economic Powers Act (IEEPA) 213
6.5.2 Country Lists 214
6.5.3 Table of Denial Orders 214

6.6 How Are Exports Conducted? 215
6.6.1 Anti-Boycott Amendments 215
6.6.2 Ribicoff Amendments to the Tax Reform Act 217
6.6.3 Foreign Corrupt Practices Act (FCPA) 218

6.7 Record Retention Requirements 220

6.8 Penalties for Violations of Export Laws 221
6.8.1 Criminal Penalties 221
6.8.2 Civil Penalties 222

6.9 Drafting International Trade Contracts 223
6.9.1 Government Regulations and Licensing Requirements 223
6.9.2 Use of Incoterms 223
6.9.3 Choice of Law and Jurisdiction—The United Nations Convention on Contracts for the International Sales of Goods (CISG) 223
6.9.4 Payment 224
6.9.5 Currency To Be Used 225
6.9.6 Warranties 225
6.9.7 Unforeseeable Force major Events 226
6.9.8 Dispute Resolution 226

6.10 Establishing an Export Compliance Program 226

Conclusion 228
Endnotes 228

Chapter 7
Licensing to Protect Telecommunications Intellectual Property 233

7.1 U.S. Patent Law 235
7.2 U.S. Trademark Law 236
7.3 U.S. Trade Secret Law 236
7.4 U.S. Copyright Law 238
7.4.1 Exceptions to the Rights of Copyright Owners 240
7.4.2 Remedies for Infringement 243
7.5 The Legality of Reverse Engineering and Restrictive License Clauses 244
7.5.1 “Only Means" of Access 244
7.5.2 Restrictive Clauses 244
7.5.3 Noncompete Clauses 245
7.5.4 Overreaching Clauses 245
7.5.5 Appropriate License Clauses 246

7.6 The European Software Directive 247
7.6.1 Similarities of European Software Copyright Law to U.S. Copyright Law 247
7.6.2 Differences Between European Software Copyright Law and U.S. Copyright Law 248
7.6.3 Importance of the Similarities and Differences between European Software Law and U.S. Law to Software Developers 249

7.7 “Must Include” Concepts for Software Licenses 250

7.8 Model License 252

Conclusion 254

PART III
LEGAL ISSUES WITH ADVANCED TECHNOLOGIES

Chapter 8
Privacy 259

8.1 Introduction 260

8.2 The Evolution of a Legal Right to Privacy 261
  8.2.1 Privacy in the U.S. Constitution 262
  8.2.2 Invasion of Privacy—Tort Law 262
  8.2.3 Supreme Court Interpretations of Constitutional Amendments Recognizing a Right of Privacy 264
  8.2.4 Balance of Personal Privacy with Other Considerations 266
  8.2.5 Supreme Court Interpretation of Fourth Amendment Regarding Wiretapping 267

8.3 Federal Privacy Laws Protecting Communications in Transit and in Storage 269

8.4 Federal Privacy Laws Protecting Personal Information in Government Databases 275
  8.4.1 Federal Records Act of 1950 275
  8.4.2 The Privacy Act of 1974 277
  8.4.3 The Computer Matching and Protection Act 277
  8.4.4 Freedom of Information Act (FOIA) of 1976 279

8.5 Federal Privacy Laws Protecting Personal Bank and Financial Information 281
  8.5.1 Bank Records and Foreign Transactions Act (BRAFTA) of 1970 282
  8.5.2 Right to Financial Privacy Act (RFPA) of 1988 284

8.6 Federal Privacy Laws Protecting Private Databases from Searches and Seizures by Government Officials 285
  8.6.1 Privacy Protection Act (PPA) of 1980 285
  8.6.2 Court Cases Reviewing the Privacy Protection Act 285

8.7 Federal Privacy Laws Prohibiting Illegal Access to Protected Computers 286
  8.7.1 Computer Fraud and Abuse Act of 1988 287
  8.7.2 National Information Infrastructure Protection Act (NIIPA) of 1996 289

8.8 Federal Privacy Laws Prohibiting Unwanted and Harassing Communications 290
  8.8.1 The Telephone Harassment Act of 1968 290
  8.8.2 The Telephone Consumer Protection Act (TCPA) of 1991 291

8.9 Federal Privacy Laws Protecting Information about Children 294
  8.9.1 Children’s Online Privacy Protection Act (COPPA) of 1998 294
  8.9.2 Child Online Protection Act (COPA) of 1998 295
  8.9.3 Child Pornography Prevention Act (CPPA) of 1996 296
  8.9.4 Protection of Children from Sexual Predators Act (PCSPA) of 1998 296
8.9.5 Children's Internet Protection Act (CIPA) of 1999 296

8.10 State Privacy Laws 297

8.11 Collection, Use, and Dissemination of Personal Information without Permission 297
8.11.1 Cookies 298
8.11.2 Social Security Numbers—Identity Theft 300
8.11.3 Intellectual Property Theft 303
8.11.4 Monitoring by Browsers and ISPs 303
8.11.5 Purchased Information and Merged Databases 303

8.12 Solutions to Collection and Use of Information without Permission 304
8.12.1 Proposed Legislation 305
8.12.2 Tort Action 306
8.12.3 Customer Caution 306
8.12.4 Industry Self-Regulation 306
8.12.5 Software to Detect and Delete Cookies and Spam 309
8.12.6 The Individual's Ability to Correct Inaccurate Information 310
8.12.7 Web Sites Offering Information on Privacy Protection 311

8.13 Application of Privacy Law to Modern Technologies and Services 312
8.13.1 Email and Voicemail Systems 313
8.13.2 Cordless/Wireless Phones 317
8.13.3 Pagers 318

8.14 International Privacy Concerns 318
8.14.2 Other Nations 320

Conclusion 320
Endnotes 321

Chapter 9

Encryption 327

9.1 Encryption Technology 330
9.1.1 Forms of Encryption 331
9.1.2 Key Structure 333

9.2 Early Use of Encryption in the United States 334

9.2.1 1930s–1950s: Encryption 335
9.2.2 1960s–1970s: Computers, Digitization, Multiplexing, Packetization and Encryption 337

9.3 Private-Key Cryptosystems 339
9.3.2 1995 (1999): Triple DES (3DES) 341
9.3.3 1997 (2001): Advanced Encryption System (AES) 342

9.4 Public-Key: Cryptosystems 342
9.4.1 Mathematical Link Between Key Pairs 343
9.4.2 Digital Signatures 347
9.4.3 Key Servers 349
9.4.4 Session Keys 349
9.4.5 Well-Known Public-Key Cryptosystems 351

9.5 Comparison of Private-Key and Public-Key Encryption Technologies 352

9.6 Law Enforcement and National Security Concerns with Public Use of Encryption 353
9.6.1 U.S. Laws Restricting the Export of Encryption Systems 333
9.6.2 U.S. Laws Restricting Private, Nonmilitary Use of Encryption Systems within the United States 356
9.6.3 Escrowed Encryption Standard (ESS) and the Clipper and Capstone Chips 359
9.6.4 Opposition to the EES, Clipper Chip and Encryption Export Restrictions 360
9.6.5 Efforts to Relax Export Restrictions 366

9.7 International Encryption Policies 367
9.7.1 The Organization for Economic Cooperation and Development (OECD) 367
9.7.3 United Kingdom 372
9.7.5 United Nations Commission on International Trade Law (UNCITRAL) 374

9.8 U.S. Reaction to International Views of Encryption 375
9.8.1 1996—Proposed Encrypted Communications Privacy Act of 1996 (S. 1587) 375
9.8.4 1997—Proposed Security and Freedom through Encryption (SAFE) Act (HR 695) 376
9.8.5 1997—Secure Public Networks Act (S. 909) 377
9.8.6 1997—Amended SAFE Act 377
9.9 Court Cases Reviewing the U.S. Encryption Export Restrictions 378
9.9.1 Bernstein Cases 378
9.9.2 Karn Decisions 381
9.9.3 Junger Decisions 382
9.10 Changes in 2000 383
9.11 State Laws Concerning Encryption, Key Escrow, and Digital Signatures 384

Conclusion 384
Endnotes 385

Chapter 10
Cyberlaw: Evolving Legal Issues with the Internet 389

10.1 Commerce on the Internet 390
  10.1.1 Uniform Commercial Code (U.C.C.) 390
  10.1.2 End-User Contracts 393
  10.1.3 International E-Commerce Efforts 395

10.2 Jurisdiction 396
  10.2.1 Jurisdiction in E-Commerce 398
  10.2.2 Personal Jurisdiction in the Internet Age 398
  10.2.3 International Jurisdiction 399

10.3 Taxation 400
  10.3.1 1967—National Bella Hess, Inc. v. Dept. of Revenue 401
  10.3.2 1987—Proposed Modern Tax 401
  10.3.3 1992—Quill Corp. v. Heitkamp 402
  10.3.4 1996 to 1997—International Tax Discussions 403
  10.3.5 1997—Proposed Internet Tax Freedom Act (ITFA) 404
  10.3.6 1998—California Internet Tax Freedom Act 404
  10.3.7 1998—Federal Internet Tax Freedom Act 406
  10.3.8 National Tax Association Communications and Electronic Commerce Tax Project 407

10.4 Trademark/Domain Names 407
  10.4.1 Trademark Infringement Issues in the Internet Age 408
  10.4.2 Actions by Companies to Protect Their Trademarks 409

10.5 Copyright 413
  10.5.1 Copyright Act of 1976 413
  10.5.2 National Commission on New Technological Uses of Copyright Works (CONTU) 413
  10.5.3 1998—Digital Millennium Copyright Act (DMCA) 414
  10.5.4 Exclusive Rights 415
  10.5.5 Impact of Fair Use on Copyright Contracts 416

10.6 Trade Secrets 417

10.7 Defamation on the Internet 418
  10.7.2 Lucent Technologies v. Johnson, Civ. No. 00-05668 (C. D. Cal. Sept. 12, 2000) 419
  10.7.3 Lucent Technologies v. lucent sucks.com, 54 U.S.P. Q2d 1653 (E. D. Va. 2000) 419

10.8 Liability of ISPs and Computer System Operators 419
  10.8.1 Publishers 420
  10.8.2 Distributors 420
  10.8.3 Common Carriers 420
  10.8.4 Claims on Web Sites 421
  10.8.5 Digital Millennium Copyright Act 421

10.9 Obscenity and Violence on the Internet 421
  10.9.1 1996—The Communications Decency Act (CDA) 422
  10.9.2 Reno v. American Civil Liberties Union (Reno II) 422
  10.9.3 Child Online Protection Act (COPA) 423
  10.9.4 American Civil Liberties Union v. Reno (Reno III) 423
  10.9.5 Child Online Privacy Protection Act (COPPA) 423
  10.9.6 State Laws 424

10.10 Fraud on the Internet 424

Conclusion 426
Endnotes 426
| Appendix A | Key Documents and Decisions Concerning Local Number Portability | 429 |
| Appendix B | Key Documents and Decisions Concerning Universal Service | 431 |
| Appendix C | Key Documents and Decisions Concerning Access and Reciprocal Compensation | 433 |
| Appendix D | Legal Instruments Embodying the Results of the Uruguay Round | 443 |
| Appendix E | Membership of the World Trade Organization | 447 |
| Appendix F | Commitments and Most Favored Nation Exemptions | 451 |
| Appendix G | Chapters within Title 19 of the U. S. Code Customs Duties | 463 |
| Appendix H | State Privacy Laws | 465 |
| Appendix I | Resources to Detect and Delete Cookies | 479 |
| Appendix J | State Laws Concerning Encryption, Key Escrow, and Digital Signatures | 483 |
| Index | 503 |