# Contents

*List of figures* ix  
*Table of cases* x  

1. R&D collaborations, technology standardization agreements and patent pools: antitrust problems or efficient solutions to antitrust problems? 1  
2. The proliferation of IPRs and the rise of standards 16  
   2.1 Network effects and interoperability 16  
   2.2 Patent management strategies 19  
   2.3 Patent thickets 29  
   2.4 The rise of agreements on technology 34  
      2.4.1 Standards, what are they? 34  
      2.4.2 What are the sources of standards? 39  
      2.4.3 Consortia and coopetition 45  
   2.5 Consumer electronics, telecommunication, information technology and to a lesser extent pharma and biotech 54  
      2.5.1 The ICT Industry 54  
      2.5.2 Patent wars 65  
      2.5.3 Standards and outsourcing 67  
   2.6 Business patent strategy models 72  
   2.7 Technology consortium 81  
   2.8 The functions of patents 87  
   2.9 Follow-on innovation 95  
   2.10 Incentive to innovate and the discovery process 98  
   2.11 Dynamic v. static competition 101  
   2.12 Monopoly v. competition 103  
   2.13 Why the theories of dynamic competition cannot be applied to some standard-setting procedures 109  
   2.14 Conclusion: dynamic competition and the need for a market? 114  
3. The governance and institutional structure of SSOs 116  
   3.1 Introduction 116  
   3.2 The *de jure* institutional structure of SDOs 118  
      3.2.1 The guiding principles of WTO 118
3.2.2 The European system 120
3.2.3 The European Member States SDOs 128
3.2.4 The international standard-setting organizations 129
3.2.5 The US standard-setting organizations 132
3.3 IP policies 136
3.4 The de facto work in SSOs and SDOs 139
3.5 The patent game in the technical committees 143
3.6 General comments and concluding remarks 145
4. The regulation of standardization agreements and adjoining collaborations 149
4.1 The US antitrust law regarding standard-setting collaborations 149
4.1.1 The NCRPA 149
4.1.2 Background to the Standards Development Organization Advancement Act 158
4.1.3 Members of the SDOs under the NCRPA 166
4.1.4 What is anti-competitive in the standard-setting process under US antitrust laws? 168
4.1.5 The Business Review Letters on SDOs 179
4.1.6 Conclusion 183
4.2 Standardization agreements under EU competition rules 184
4.2.1 Introduction 184
4.2.2 Undertaking and the connection between competition law and the free trade rules 184
4.2.3 Cases concerning assessment under Art. 101 TFEU 191
4.2.4 The application of the R&D block exemption to standard-setting activities 194
4.2.5 The Horizontal Guidelines 197
4.2.6 What is anti-competitive under EU competition law with reference to standard-setting? 205
4.2.7 EU Commission case law on the interface between joint R&D and standard setting 214
4.2.8 Conclusion 223
4.3 Regulation of standards under competition law, de lege ferende 224
5. Patent pools 229
5.1 Introduction 229
5.2 The structure of technology pools and some alleged pro- and anti-competitive effects 230
5.2.1 Structure 230
5.3 The modern approach to patent pools under US antitrust law
5.3.1 The early Business Review Letters
5.3.2 The US Philips I case
5.3.3 The latest Business Review Letters
5.3.4 Future patent pools or joint defence solutions?
5.3.5 Conclusion
5.4 The EU antitrust approach to patent pools
5.4.1 Structure
5.4.2 The famous patent pools
5.4.3 The EU pool structure
5.5 Comparative analysis of patent pools in the light of standard setting
5.5.1 Introduction
5.5.2 Telecommunications and the problem of developing patent pools
5.5.3 The difference between, on the one hand, the JVC-Betamax, DVD and Blu-Ray standard wars and, on the other hand, the telecommunications industry
5.5.4 When is a standard derived patent pool an anti-competitive cartel?
5.5.5 Price discrimination and marginal squeeze
5.6 Concluding remarks
6. Unilateral conduct under standards
6.1 The early patent ambush incidents
6.2 Dominance under US antitrust law and EU competition rules
6.3 Patent ambush
6.3.1 The US Qualcomm cases
6.3.2 The Rambus case
6.3.3 The EU Qualcomm case
6.4 IPCom and other cases concerning the sale and purchase of SEPs
6.4.1 The purchasers/assignees
6.4.2 The sellers/assignors
6.4.3 Conclusion
6.5 Access to patents, i.e. injunctions: A competition law or IP law problem?
6.5.1 The Orange-Book-Standard and other European cases
6.5.2 eBay and the ITC cases that followed
viii Standardization under EU competition rules and US antitrust laws

6.5.3 The Google/Motorola cases 334
6.5.4 The US and EU doctrines 341
6.6 Essentiality, overdeclaring essentiality and workarounds 344
6.7 Defining FRAND 349
6.8 Concluding remarks and a discussion regarding outstanding issues 361

7. Comparative analysis and critique 365
7.1 Introduction 365
7.2 Limits to competition policy and law 367
7.2.1 Sometimes no room for ‘trial and error’ 367
7.2.2 Government and courts should not decide on standards 370
7.2.3 The interface between competition law and trade rules 375
7.3 The interaction and interface between standards, IP arrangements under SSOs/SDOs and patent pools and what should be considered anti-competitive 381
7.3.1 What may be anti-competitive? 381
7.3.2 Application of competition law 384
7.3.3 The application of competition law outside the safe harbour 389
7.3.4 Anti-competitive agreements under infrastructure standards 391
7.3.5 Anti-competitive agreements under interoperability standards 393
7.3.6 Anti-competitive conduct under product design standards 399
7.3.7 Patent thicket and other market failures 401
7.3.8 Conclusion 401
7.4 Pre-standardization agreements and agreement on technology 402
7.5 Unilateral conduct under standards 407
7.5.1 PAEs 411
7.6 More developed and stringent procedural rules when scrutinizing SSOs 413

8. Conclusion 419

Bibliography 425
Index 445