

CONTENTS

Foreword page xvii
THOMAS COTTIER
Preface xix
List of Abbreviations xxi

PART I **Foundations and Problems**

1 Introduction 3

1.1 Interoperability Standards, Network Externalities
and Market Dominance 3

1.2 Balancing the Interests of Creators and Users of
Essential Interoperability Standards through Intellectual
Property and Competition Law 4

1.3 Interfacing Intellectual Property and Competition in
International Economic Law 8

1.4 Methodology 10

1.5 Structure of This Work 14

2 Standards and Interoperability Standards 16

2.1 The Fundamental Importance of Standards
and Interoperability 16

2.2 Defining the Concept of an Interoperability
Standard 17

2.2.1 Some Basic Definitions 17

2.2.2 Typologies of Standards 19

2.2.3 Interoperability Standards: Definitions 21

2.3 Notable Interoperability Standards: from QWERTY
towards an Internet of Things 25

2.3.1	Keyboard Configurations: QWERTY and Its Discontents	26
2.3.2	Video Recording Formats: the Standards War between VHS and BETAMAX	27
2.3.3	The 802.11 Family of Wireless Area Network Standards	28
2.3.4	Internet Standards: Transmission Control Protocol/Internet Protocol	29
2.3.5	Mobile Wireless Standards: from 1G to 4G and beyond	32
2.3.6	Near Field Communications Standards	33
2.3.7	Mobile Payment Standards: Cash Goes Wireless	34
2.3.8	Towards an Internet of Things	35
2.4	Who Makes Interoperability Standards?	36
2.4.1	International Organizations: the International Telecommunication Union	37
2.4.2	International Bodies: ISO, IEEE and IETF	39
2.4.3	Regional and National Standard-Setting Organizations	42
2.4.4	Private Standard-Setting Organizations and Consortia	43
2.4.5	Single-Firm Standard-Setting	44
2.5	The Creation of Interoperability Standards	44
2.5.1	Overview of the Standard-Setting Process	44
2.5.2	'Best Practice': ISO and Others	46
2.6	Economic Characteristics of Interoperability Standards: Network Effects, and How Standards Become Standard	48
2.6.1	Standardization through Force of Law	48
2.6.2	Standardization through Widespread Marketplace Acceptance	49
3	Interoperability Standards and International Economic Law	54
3.1	The Provisions of the TRIPS Agreement	54
3.1.1	The Minimum Standards of Protection Articulated in the Provisions of the TRIPS Agreement	54
3.1.2	Certain Provisions of the TRIPS Agreement Exhibiting the Character of Maximum Standards	57

CONTENTS

xi

3.1.3	Significance of the TRIPS Flexibilities	62
3.2	The WTO Agreement on Technical Barriers to Trade	69
3.3	The WTO Telecommunications Agreement	72
3.4	The WTO Information Technology Agreement	74
3.5	International Competition Law	75
3.6	Concluding Observations	77
PART II The Impact of Intellectual Property and Competition Laws		
4	Interoperability Standards and Intellectual Property	81
4.1	The Concept of Standards-Essential Intellectual Property	81
4.2	The Law and Economics of Intellectual Property Protection	81
4.3	Patents	84
4.3.1	Standards-Essential Patents	84
4.3.2	Standards-Essential Patents, Hold-Up and Royalty Stacking	90
4.3.3	Defences to SEP Infringement	97
4.3.4	Remedies for Patent Infringement	100
4.3.5	SEPs in the Particular Context of Software Patenting	111
4.4	Copyrights	118
4.4.1	Standards-Essential Copyright	118
4.4.2	Remedies for Infringement of Standards-Essential Copyright	140
4.5	Protection for the Layout Topographies of Integrated Circuits	148
4.6	Trade Secrets	148
4.7	Compulsory Licensing of Intellectual Property Rights	150

4.7.1 Compulsory Licence for Established Contravention of Competition Law	150
4.8 Concluding Remarks about Standards-Essential Intellectual Property	154
5 Interoperability Standards and Competition Law	157
5.1 Introductory Comments	157
5.2 The Essential Facilities Doctrine	157
5.2.1 Historical Development and Intellectual Foundations of the Essential Facilities Doctrine	158
5.2.2 Development of the Essential Facilities Doctrine in European Cases	178
5.2.3 The Doctrine in the Context of Intellectual Property and Interoperability Standards	182
5.2.4 Application of the Doctrine to Interoperability Standards and Standards-Essential Intellectual Property	191
5.2.5 The Law and Economics of the Essential Facilities Doctrine	193
5.3 Request for Injunction in Relation to Standards-Essential Patents as a Competition Law Breach	201
5.3.1 United States Law	202
5.3.2 European Law	203
5.3.3 Chinese Law	209
5.3.4 Merits of Applying the Unilateral Disciplines to Address Injunctions for FRAND-Encumbered SEPs	209
5.4 Excessive or Unfair Pricing	212
5.4.1 European Law	213
5.4.2 Chinese Law	214
5.4.3 Excessive Pricing: Concluding Observations	215
5.5 Misconduct or Fraud in the Creation of Standards	215
5.5.1 United States Law	216
5.5.2 European Law	219
5.5.3 Chinese Law	220
5.5.4 Conclusions Regarding Fraud and Misconduct in Standard-Setting	221

CONTENTS

xiii

5.6	Tying	221
5.7	Horizontal Conduct	223
5.7.1	United States Law	223
5.7.2	Chinese Law	225
5.7.3	European Law	225
5.7.4	Concerted Practices and Interoperability Standards – Analysis	227
5.8	Competition Law Approaches to SEIP: Conclusions	228

PART III Towards Liability and Compensation

6	Exclusive Property Rules or Liability Rules for Interoperability Standards and Standards Essential Intellectual Property?	233
6.1	Exclusive Property Rules, Liability Rules and Inalienability Rules	233
6.1.1	The Coase Theorem	233
6.1.2	The Calabresi and Melamed Framework	234
6.1.3	Extensions of the Calabresi and Melamed Framework	237
6.2	Standards-Essential Intellectual Property: Exclusive Property Rules or Liability Rules?	239
6.2.1	Existing Scholarship	239
6.2.2	Analysis: Liability or Exclusive Property Rules for Standards-Essential Intellectual Property?	244
6.2.3	The Choice between Exclusive Property Rules and Liability Rules for Standards-Essential Intellectual Property: Concluding Observations	257
6.3	Exclusive Property Rules, Liability Rules and Refusals to Supply	258
6.4	Implications for Injunctions and Compensation	261
6.4.1	Implications for Injunctions	261
6.4.2	Implications for Compensation	263
6.4.3	Implications for Compulsory Licensing	276
6.4.4	Broader Implications for Unilateral Competition Law Disciplines, Including the Essential Facilities Doctrine	278

7	Access to Interoperability Standards and Standards-Essential Intellectual Property	279
	International Dimensions	
7.1	Basis for an International Approach	279
7.2	Binding Treaty Action or International Soft Law?	282
7.3	Selecting the Appropriate Forum	288
7.3.1	International Organization for Standardization	289
7.3.2	International Telecommunication Union	290
7.3.3	World Intellectual Property Organization	291
7.3.4	World Trade Organization	292
7.3.5	International Competition Network	293
7.3.6	Organization for Economic Co-operation and Development	295
7.3.7	Standalone Forum	296
7.3.8	Analysis and Conclusions as to the Appropriate Forum	301
7.4	The Appropriate Process to Be Followed in Developing an Expert Manual	305
7.4.1	Expertise	306
7.4.2	Adequately Representative Composition of an Expert Group	306
7.4.3	Robust and Transparent Process	306
7.5	The Appropriate Purpose and Structure of an Expert Manual	308
7.5.1	General Observations	308
7.5.2	Proposed Substantive Contents	309
7.6	Consistency with International Law of the Proposed Approach	313
7.6.1	Patents	313
7.6.2	Copyrights	325
7.6.3	Layout Circuits	329
7.6.4	Trade Secrets	330
7.6.5	Enforcement of Intellectual Property Rights	330
7.6.6	Conclusion regarding Consistency of the Proposed Approach with Existing International Agreements	331

CONTENTS XV

8	Concluding Observations	333
9	Draft Expert Manual	347
	<i>Bibliography</i>	356
	<i>Index</i>	395