

## Contents

Foreword.....	V
Preface.....	VII
Contents.....	IX
List of Figures.....	XIII
List of Tables.....	XIV
Abbreviations.....	XV
<b>1 Introduction.....</b>	<b>1</b>
1.1 Characteristics of Broadband.....	2
1.1.1 Technical Characteristics.....	3
1.1.2 Economic Characteristics.....	5
1.2 Research Questions.....	8
1.3 Research Approach.....	10
1.4 Structure and Further Proceedings.....	14
<b>2 Liberalisation and Regulation in Telecommunication Markets.....</b>	<b>16</b>
2.1 European Telecommunications Regulation until the 2002 Framework.....	16
2.2 Telecommunications Regulation in Germany and the UK.....	19
2.3 Theories of Regulation.....	23
2.4 The 2002 Regulatory Framework for Electronic Communications.....	25
2.5 The Process of Market Regulation.....	27
2.6 Actors Involved in the Process of Market Regulation.....	34
2.6.1 The European Commission.....	35
2.6.2 The European Regulators Group.....	37
2.6.3 National Regulatory Authorities.....	38
2.6.4 National Competition Authorities.....	38
2.7 Interim Conclusion.....	39
<b>3 Theoretical Approaches on Strategic Investment Decisions in Regulated Markets.....</b>	<b>40</b>
3.1 Research on Broadband.....	40
3.1.1 Unbundling and Wholesale Regulation.....	41
3.1.2 Comparative Research.....	47
3.1.3 Assessment of Existing Literature.....	50
3.2 Theoretical Approaches on Strategic Investment Decisions in Telecommunications.....	51
3.2.1 Financial Approaches.....	54
3.2.1.1 Traditional Investment Calculation Methods.....	54
3.2.1.2 Real Options.....	55

3.2.1.3	Contributions .....	57
3.2.2	Strategic Approaches.....	58
3.2.3	Neoclassical Approaches.....	60
3.2.4	Institutional Approaches .....	62
3.2.4.1	Property Rights Theory.....	64
3.2.4.2	Transaction Cost Theory.....	66
3.2.4.3	Principal Agent Theory.....	69
3.2.4.4	Contributions .....	71
3.3	Interim Conclusion.....	73
<b>4</b>	<b>Development of a Framework.....</b>	<b>77</b>
4.1	The Analysis of Institutions .....	77
4.2	Institutional Conditions in a Regulated Environment .....	80
4.2.1	The Institutional Part of the Integrative Framework .....	81
4.2.2	Characteristics of Political Markets.....	83
4.3	Economic Markets in a Regulated Environment.....	85
4.3.1	Retail, Wholesale and Supply Markets .....	85
4.3.2	Market Entry in Regulated Wholesale and Retail Markets .....	88
4.4	The Level of the Firms.....	89
4.5	The Analytical Framework .....	90
4.6	The Application of the Framework.....	93
<b>5</b>	<b>Explorative Case Studies on Strategic Investment Decisions and Regulation in European Broadband .....</b>	<b>98</b>
5.1	Institutional Structures .....	100
5.1.1	The Institutional Stances of European Regulators .....	103
5.1.1.1	National Regulatory Authorities and National Competition Authorities.....	103
5.1.1.2	National Regulatory Authorities and the European Regulators Group.....	105
5.1.1.3	National Regulatory Authorities and the European Commission .....	106
5.1.1.4	National Regulatory and Political Authorities.....	108
5.1.2	The Stances of National Regulatory Authorities in Germany and the UK.....	110
5.1.2.1	The Stance of Ofcom.....	110
5.1.2.2	The Stance of the Bundesnetzagentur.....	115
5.1.3	The Independency of National Regulatory Authorities.....	121
5.1.4	Consequences of Institutional Structures on Strategic Investment Decisions .....	126
5.1.4.1	The Calculability of the Regulatory Environment.....	129
5.1.4.2	The Transparency of Regulatory Processes.....	130
5.1.4.3	The Duration of Regulatory Processes .....	131
5.1.4.4	The Consideration of National Particularities.....	132
5.1.5	Findings on Institutional Structures.....	133

5.2	Business Regulator Relationships .....	133
5.2.1	The Rise of the Regulatory Departments .....	134
5.2.1.1	The Development of a Strategic Perception of Regulation.....	135
5.2.1.2	Business Regulator Relationships in Germany.....	138
5.2.1.3	Business Regulator Relationships in the UK.....	139
5.2.1.4	Business Regulator Relationships on the European Level.....	142
5.2.2	The Role of Lobbying Associations.....	143
5.2.3	Business Regulator Relationships and Strategic Investment Decisions .....	146
5.2.4	Findings on Business Regulator Relationships .....	149
5.3	Regulatory Intervention in Broadband Markets.....	149
5.3.1	Supplier Structures and Access Regulation.....	149
5.3.1.1	Competition Structures in German and UK Broadband Markets .....	150
5.3.1.2	Particularities of German and UK Broadband Markets .....	154
5.3.2	Investments in German and UK Broadband Markets.....	158
5.3.2.1	Overall Investments in the UK Telecommunications Market.....	159
5.3.2.2	Overall Investments in the German Telecommunications Market.....	160
5.3.3	Regulation and Investment in Next Generation Networks in Germany .....	163
5.3.3.1	The Political Debate on Regulatory Holidays in Germany.....	163
5.3.3.2	The Strategy of DTAG with Regard to the Regulatory Environment.....	167
5.3.3.3	Potential Consequences of Regulatory Holidays .....	169
5.3.4	Regulation and Investment in Next Generation Networks in the UK .....	171
5.3.4.1	BT's 21 <sup>st</sup> Century Network and the Strategic Review .....	171
5.3.4.2	The Strategy of BT with Regard to the Regulatory Environment.....	172
5.3.5	Findings on Regulatory Intervention in Broadband Markets .....	175
<b>6</b>	<b>Findings on Strategic Investment Decisions and Regulation in European Broadband .....</b>	<b>176</b>
6.1	The Relationship between Regulation and Investment in Broadband.....	176
6.2	Ten Theses on Regulation and Strategic Investment Decisions in Broadband .....	182
6.3	Theoretical Contributions and Assessment.....	185
6.3.1	Contributions on the Institutional Structures of Broadband Markets .....	186
6.3.2	Contributions on Business Regulator Relationships .....	188
6.3.3	Contributions on Different Perceptions of Regulation .....	190
6.3.4	Assessment in Relation to Existing Literature .....	193
6.4	Policy Recommendations.....	194
<b>7</b>	<b>Conclusion and Outlook .....</b>	<b>198</b>
	<b>Appendix.....</b>	<b>201</b>
	<b>References.....</b>	<b>203</b>
	<b>Index.....</b>	<b>223</b>